

THE  
**SOUTHERN AGRICULTURIST.**

AUGUST, 1838.

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**PART I.**

**EDITORIAL AND ORIGINAL.**

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*An Address delivered before the Agricultural Society of  
St. John's, Colleton; by JOSEPH E. JENKINS, Esq.,  
President.*

GENTLEMEN,—

The successful cultivation of the earth depends upon a few immutable principles, which have obtained more or less wherever seed is sown, or harvests gathered. These are *proper* manuring, tillage, and draining. All other circumstances in agriculture are incidental. We may for illustration, instance the Western country at the present day—there the first of these requirements may be dispensed with. The lands are in a virgin state; an accumulation of rotten leaves, for centuries, has made a deposit, which for years to come, may preclude the necessity of farther labor, than of the axe to clear the forest, the hoe to break the soil, and a careless sowing of the seed; and the result will be, a rich and abundant harvest. But time will do his office there as elsewhere. To us, the first of these is *now* an absolute necessity—the planter who in this section of the country neglects to manure, and yet expects a harvest, would remind one of *that rustic* who waited for the river, that it should flow by, to give him passage; but it flows on, and will forever flow on. The two months of July and August, have been very correctly termed, the most important in the year to an active and industrious planter. They are the months in which he is most at leisure, to collect and se-

cure for the ensuing crop, the requisite manure, and upon the amount so secured, (barring storms and caterpillars) will principally depend his success or failure. It would be preposterous to assert, that man is independent of the elements—when the hand of Him who rules them is felt, the wise submit. He sends his storms, and our crops are withered. But this should not and does not check our exertions; the planter, as the mariner, leans upon the anchor of hope, and sees still brighter day even in the darkest hour. And well it is my friends, that there exists this elasticity of mind. What else could have sustained him under the disastrous shocks of the past year? The elements, as well as the moral, monetary, and political world, have each in turn been dreadfully convulsed; but we have not time at present to consider them, they have passed over us, and we are here to hope on still.

We proceed with our subject. All animal, vegetable, and many mineral substances, may be converted into manure. With the two first we are most conversant; the last has not yet sufficiently occupied our attention, with perhaps the exception of salt, which as a component part of marsh mud, has been long and successfully used. Some of our members have, within a year or two, used it in its raw state, but the results have not yet been sufficiently satisfactory, nor the trial sufficiently extended, that we should at present dwell upon them. On those gentlemen, we may with confidence rely for statements at the proper time. The manure most commonly in use amongst us, is vegetable, decomposed in our cowpens, where leaves of trees (principally of the pine) are dunged upon and trampled by the cattle. It is the common usage of this section of country, to lay by, or more properly speaking, leave off working the growing crop at or about the tenth day of the present month (July), after that period, it is considered by some of our best planters as rather hazardous to meddle with, as any new excitement, by stirring the earth around the root of the plant, which would cause a new growth, would at the same time cause a disastrous falling of the young fruit or capsules. We may consider it, therefore, as a pretty general rule, growing out of experience (that best of teachers) at this period as most advantageous to go to something else, and that something else is the collection of manure. We are bountifully supplied with all the requisites; the leaves of the

pine appear to be prolific for the especial purpose of furnishing us with an excellent substance for our use. The borders of our rivers, which are numerous, intersecting our islands in every direction, abound in a highly nutritious marsh grass, of easy access, of a tender stalk, very convertible into muck manure. A few months tramping, either in the cowpen or stable, renders it a mass the most powerfully stimulative of any manure with which we are conversant, so much so indeed, as to have induced the belief, that its exhibition upon what is called table lands of a dark loam, has a tendency to cause the cotton plant to overgrow; and on lands impregnated with whatever substance it is that causes blue, to fall more certainly, and to run into vines. In this state, its product is beggarly indeed. I have seen portions of cotton fields, whose product was not a solitary pod. Marsh mud is our next important material. This substance is abundant to superfluity, and the experience of every planter on this Island, with the exception of one or two, has sustained it as highly advantageous and profitable. Its tendency is to render loose lands more tenacious—to restore the original stamina to worn out or exhausted soils, causing thereon the stalks to hold the fruit, as in its virgin or original state, but it has been doubted whether it has a direct action in producing luxuriance of vegetation. This is a matter of little importance, and I shall not stop to consider it. There is a remedy if it is so, which the very nature of the location points out emphatically to our view—this is simply a combination of the marsh grass with it. To effect this, two years ago I commenced the following process—eight fellows were furnished with scythes to mow down the marsh; eight more placed in boats and flats, to gather up and convey it to a place of deposit at the margin of the river. They thus conveyed each day sixteen cords, or a cord a piece for each hand employed. Day by day we did this, from Monday morning to Friday night, depositing along the margin of the river, within the reach of the high tide, consecutively, each days cutting. On Saturday, at low water, all hands upon the plantation, both these and others, let their employment be what it may, were called, and with handbarrows, covered the whole surface of the marsh with mud, from one to one and a half foot thick. The weight of the mud compressed, and held firmly in its position,

the marsh under it—the tide at high water passed through the compressed marsh, hastening wonderfully the process of decomposition, and at the time when it was taken up in the spring to be conveyed upon the land, it had (that is the marsh) a black look, as if ready to be resolved into its original elements. The hoes with which it was cut away, passed through it with peculiar ease and facility, as much so almost, as if it had been all mud. This process of making manure, recommends itself on several grounds—first, its entire and perfect mingling, and thereby meliorating the condition of each of two substances, the one thought dangerous from the excess of strength; the other held useless by some for the want of it. Secondly, the saving of extra carting to the cowpen, to be trampled as in the usual way—and thirdly, the great facility with which they are brought to the place of deposit. I have seen the negroes, when cutting on the side of the river where the heap was to be made, leaving the boats, collect into great masses the cut marsh, and getting behind them, push up an immense quantity to the shore with the greatest ease. With the mixture thus collected last summer, I manured this spring fifty-nine acres, at the rate of forty loads to the acre, which I hold to be as profitable an investment of the work of sixteen hands for two months, as well can be made, being at the rate of three acres and three quarters to the hand.

The making of cowpen compost, with pine trash and other leaves, was effected by the women. The light trash was raked up and placed at the edge of the woods, whence the trash carts conveyed them to the pen. Here I would remark upon the advantages which result from the proper structure of the trash carts. An entire body of light stuff, in open lattices, should be so fixed up at the sides and back, as that a two ox wagon should hold a cord of pressed leaves; two oxen in proper keep, will, with apparent ease, draw this much. These useful animals, patient and sturdy, require in the summer much care and attention—an inhuman driver, inattentive to their wants, will soon destroy them. They cannot work long without water; they require immeasurably more than either the mule or the horse to sustain them—but with this requisite properly attended to, they can perform from their superior strength, although slow of gait, almost as much work as either. The primest fellows, therefore, and most



industrious, should be detailed for this service, otherwise time will be idled away in the morning, which to regain, the animals will be overworked in the afternoon, and thus suffer much maltreatment and abuse. Drivers of oxen should never be indulged in carrying large sticks in their hands; a small switch, or a thong of leather fastened to a handle, is quite sufficient, for these docile and tractable animals easily learn the word, and are as well so directed, indeed better, than by the most severe blows that can possibly be inflicted. Their yokes should be light, with the haimes or bows fitting tight around the neck; by allowing them to be too loose, they play upon the working of the shoulder blade, and inflict dreadful wounds, lacerating the skin in a shocking manner, and incapacitating the animals for the performance of one half their labor. With regard to the application of manures, that must mainly depend upon the previous state of the lands on which they are to be used. The usual quantity allowed to the cotton crops, is from twenty to thirty loads of compost to the acre, and from forty to eighty of marsh mud, but it is seldom that these extremes are reached, more commonly the lesser than the greater. The apprehension which, when we first commenced manuring, I heard expressed by some, that manuring would in the long run prove more injurious than beneficial, has I think entirely subsided. I presume there is not within the sound of my voice, I may say indeed within the bounds of this parish, a planter who would now be willing to subscribe to such an opinion. Like other schemes of improvement, it at first had its opponents, but like all useful innovations, it has out lived detraction. Could I learn the name of the first man in this parish who made a compost pen, and had I it within my power, his fame should be spread abroad, and his name be immortalized; for he has rendered to us an inestimable blessing, and far be it from any one to withhold his meed of praise.

But agricultural improvements progress so gradually; they go from one to the other so imperceptibly, so silently, and there is so little ostentation, and what there is, is confined within so narrow a circle, that contributors to the general benefit in this line, are apt to be forgotten—'tis their fate, I fear, like some village Hampden, to rest unknown.

Under the generic term *tillage*, I include all operations, either with the spade, plough, hoe, mattock, rake, or harrow. In passing through the upper country, the planters there are astonished on inquiry, at learning how little use is made by us of the plough; an instrument of indispensable necessity to them—but it is easily to be accounted for. Two systems of agriculture can never be more dissimilar, than the one used by them, and that which obtains in this section of country. There (I speak of the section through which I passed this spring) 'twould be preposterous to speak of manuring; from twelve to fifteen and upwards of acres to the hand, are commonly planted of cotton alone; here three and a half, and in some rare instances four, of cotton, and one of corn. We have not the facilities of shifting our fields from a worn out spot, to a virgin clearing, exhausting that, and then again pursuing the same process. No, our plantations, generally contracted in size, have long since had almost every stick of original timber cut down for culture, from which our ancestors, time out of mind, extracted the stamina, and worn out, they fell into our hands to be resuscitated, or poverty and starvation must be our lot. Necessity, therefore, compelled us to contract the quantity, in order that although but little should be planted, that little should, by a superior mode of culture, be made to yield as much, if not more, than treble its quantity, under looser management. I always regarded as a fable, the story of the old Roman with his two daughters, and three acres of land; 'till experience has convinced me that it is fully entitled to every credit; more especially in all grain, ground, or vine crops, as for instance, corn, potatoes, or pumpkins. These, to my certain knowledge, might, in the space of one single year, by a more generous expenditure of manure, be more than trebled on the same land. Cotton being perennial in its native countries, might be overdone, and made to run too far into the fall by excess of manure, and by that means be utterly destroyed. I employ, therefore, the quarters of acres of land on which the cowpens are located for compost, in pumpkins; they give a generous return—for six weeks last year during the pumpkin season, I fed two horses bountifully with the product of a single quarter.

But to return: the above stated causes, therefore, in some measure, precluded the necessity of the plough;

and another, perhaps more immediately in the secret, the high value of the article under cultivation (the long staple cotton) has curtailed so much the corn fields, that horses for ploughing are deemed more expensive than profitable. Hence our system approaches nearer horticulture, than farming; our fields comparatively, are perfect gardens. You will be surprised at the statement of the fact, that on my return from Columbia on the 1st of June, I did not see a field of cotton which had the appearance of having had a single working, from the time the seed had been deposited in planting, to that day; the weeds and grass in most of them were taller than the cotton. Whereas with us, even before I left this Island, which was on the twenty-fourth of May, most of our planters were in their third working, and one gentleman in particular had finished it. Do not understand me, however, gentlemen, as condemning their system—to them it may be most profitable; to us, one thing is certain, it would be ruinous. The hoe, therefore, is the implement of husbandry most in use with us, and a powerful implement it is in the hands of a strong and vigorous people. With what precision and peculiar elegance, with this simple instrument, is the earth made free of all noxious weeds and grass, within an almost imperceptible distance of the cotton plant. The most fastidious amateur would confess himself delighted with its operation, in the hands of one well skilled to use it with effect. Our process in preparing lands is as follows: The manure having, as early as we can spare the carters from the gin-house, been hauled into the field and conveniently deposited, is strewn into the alleys of the old beds, at which rate the planter can afford, generally, from three to four, and in some instances more bushels, to each alley of one hundred and five feet in length. This operation should be effected as early in the spring as possible, in order that time might be had for its more perfect decomposition, by the period when the plant shall need its support. As fast as the manure is laid down, a slight listing of earth is drawn over it; this prevents the action of the sun and rain from extracting its stimulative qualities. The next process is a heavy banking. At this period, the plough might be very advantageously used—in lands any wise stiff, it advances the work wonderfully: the side earth to the listing, being broken and pulverised, is drawn up into a ridge with

much ease, and the quantity to be done might be much augmented. I have used in my time, though upon a limited scale, and therefore not much of an authority, three or four varieties of ploughs. I give the preference to the shovel plough over all of them ; simple in its structure, it is yet strong and efficient, and can, by a proper twist in its fixture, be made to throw up as fine a bed, as any of the more celebrated Dagon or Eagle ; and where there is not much skill, (and it would be difficult to find much here) and where the blacksmith's shop is not very handy, it is the best on every consideration. The ridging being finished, the seed is planted.

The old method of drill planting, or strewing the seed in open trench on the bed, is almost exploded. Cotton seed is now considered too precious as a manure for the corn field, to be thus lavishly expended, and economy teaches that nothing should be wasted. From a peck to half a bushel, is deemed quite sufficient for sowing an acre, and there are but few who now exceed that quantity. To make this small amount of seed sufficient, the planter having a tolerable knowledge of the strength of his lands, determines in his mind how many stalks on the row the lands can well support ; having fixed upon the number, the chops or holes are made in conformity thereto, as nearly equi-distant as possible, and but a few seed more than the requisite number of stalks which will finally stand, are therein deposited. He who is observant of the times and seasons, and is wise, conforms his practice to their changes. I remember the time very well, when it was universally the practice for all planters to have their fields sown from the 25th of March, to the 1st of April. I have known a gentleman on this Island, twenty years ago, as an experiment, plant a small portion of his field on the 10th of March, and it succeeded. But my friends, those halcyon days are gone ; our climate, from some cause as yet deeply hid in the impenetrable secrets of nature, has undergone a disastrous change. It is not unusual, to have frost quite sufficient to destroy the tender plant on or about the tenth of April, and dire necessity has forced us to postpone to that period and later, our planting time. But there is no evil without its correlative good ; the time lost to planting, should be devoted to extra manuring ; and whilst the creeks last, and mud and marsh exist, we need never want employment.



The tender plant now bursting into light, calls for immediate attention, and if there is a period in a planter's life, which more than any other, demands the exercise of mind and vigilance, 'tis from this to the laying by of the crop; the hoeings, the haulings, the thinnings, will keep him in perpetual exercise. In former days, a hoeing was always succeeded by a hauling, and first thinning—a change in many instances has supervened, and two hoeings with, or without a first thinning, is practiced—but truly I cannot see into the philosophy of the change. The young plants are made sturdier by the abstraction of their greedy companions; and fresh earth to thin roots, must, I would think, be as nourishing as fresh milk in the animal kingdom, is to the youngling in its infancy; but I am no physiologist. I turn this matter over to the doctors, let them investigate it, and the employment no doubt will result as well in pleasure as in profit. To you, my friends, who are practical planters, I would have appealed at the last meeting for your experience upon this very subject, and for that purpose gave out at the meeting before, the question that I did for discussion at it; but circumstances prevented that meeting, and to day I fear has too much business of its own, for our usually delightful, and instructive plantation talk; but some day, I trust, it will be revived. Too much care cannot be taken in its earliest stages, to keep the cotton plants free from grass and weeds; feeding, as most noxious weeds and the common grasses of our fields do, by the roots, upon the aliments within the bed, rather than upon the air by their leaves, they soon starve out the more tender exotics, and unless suppressed, would in a short time overcome and destroy them. Planters therefore to succeed, bend their attention to this point as soon as they have put in their corn and potatoes, and incessantly are they employed in successive hoeings and haulings, until, as I have before intimated, the tenth of this month. So much stress is laid by some planters upon the number of times the field is gone over with, by the hoe, that I have heard this proposition, "tell me the number of workings you have given your field, and I will tell what will be its product, whether good or bad." Although this may appear extravagant, yet no doubt it has its foundation in the true philosophy of planting, and is the result of experience, close observation, and industry.

The thinning of cotton, taxes the judgment of the planter more than any other operation which he has to perform; too early and too rapid a thinning, has the effect of stunting very materially the plant; on the contrary, left too long in a crowded state, they run up into lank and weak stalks, which upon being left alone, fall to the ground; and should the earth be wet, and a scalding sun meet them in that state, they are apt to be materially injured. The better practice is to commence early, and gradually lessen the number of stalks at each working, 'till the desired thinness is attained, which should not be until the last of June, or early in July.

In the East Indies and other parts of the world, (as for instance China and Egypt) where irrigation is needed and practiced, *draining* is effected for the exact contrary of its purpose here; *there* to retain, *here* to let off water. It stands to reason, therefore, that it should be upon a different principle, and should *we there* find a drain whose sides are left higher than the neighboring lands declining into it, we could rationally account for it by supposing that it is so left to prevent the waters from getting away too soon, and thereby losing the benefit of irrigation—not so with us; the design and intention of every planter in making a drain through his fields, is to relieve his cotton as soon as possible from the deleterious effects of water being about its roots; there is no axiom better established *now*, than that water remaining in the alleys of the growing crop, is injurious in a very serious degree. Another effect resulting from efficient draining, is the facility with which the grass is subdued; the lands being made dry, the grass will, after the hoe has passed under its roots, wither away and die; not so in lands sobbed and saturated with water—every planter's experience has established that fact.

When nature has done all, and so formed lands that they neither retain water, nor are washed by its escape, let the owner of these lands rejoice, for he is saved a deal of trouble and expense—for of all operations upon a plantation, to have a field properly drained, requires the greatest skill, and labor constantly renewed. The cotton plant being a native of tropical climates, which are visited by periodical rains, and then by a long succession of drought, perhaps for months, has not (although now for half a century it has been here cultivated) yet assimila-

ted itself to the daily varying, temperature of these latitudes; it feels disastrously after its first and second stages, every excessive fall of water, every saturation which too much incommodes its roots—and although from its nature and the nature of our climate, we can never hope fully to remedy the evil, yet as all science is progressive, why may not we too, by patient perseverance, having fully satisfied our minds by a philosophical inquiry of the truth of our premises, yet see the day when excessive rains themselves shall be comparatively innoxious?

A planter should not despise any thing as too little for his attention, which has a tendency to add to his comforts. The happiness of every individual, is at last, when we come to examine life critically and calmly, but the effect of a combination of small matters. The garden, the orchard, the piggery, the hen roost, are to be sure but little things when taken separately, and comparatively, but what family is not made more comfortable by having them in their proper season? They are the very poetry of a planter's life, his recreation, his solace after the more laborious duties of the field. The variegated prospects which are spread before him in a well stocked garden, delightful both to smell and sight, flowers of the spring mingling their odor in this happy clime, must, if his soul is attuned to harmony, calm and temper him to placid contemplation; make him sensible of an internal principle; a something which elevates, which raises, which expands the mind, and places it in a position to look with dignity, with undisturbed serenity, (save with pity for their lot) on the turbulent passions, the violence, the thirst for blood, which agitate their unhappy victims bound to the Jauggernaut car of this world's perversions: make the poet's thought consonant and intelligible, that

"Revenge is but a frailty, incident  
To crazed and sickly minds. The poor  
Content of little souls, incapable to surmount  
An injury: to weak to bear offence,"

However german to the subject, legitimate in its descent, pleasant in its pursuit, I feel that the train of thought awakened, if indulged, would lead too far for our present purpose, I hasten then to a second branch of the minor matters.

An improved breed of cattle is a desideratum amongst us, or at least more attention to those we have as to their

winter fare, would conduce much to their improvement. On James Island, there resides a gentleman, who I understand has acquired the art of curing the common marsh grass, so as to make excellent fodder. I have myself experimented a little in it, but must confess that I have invariably failed; the marsh at the bottom of the stacks has constantly rotted, and the outer surface as constantly became dry as sticks; my cattle refused to eat it, and it was turned into the manure pen. But we should not be discouraged—try again.

Our marsh lands are so soft, that it is a question whether a heavier breed of cattle would succeed well. In the spring of the year, when the high lands are entirely denuded of every vestige of the former year's herbage, our cattle resort to the borders of the creeks for cropping the young marsh, which, a combination of moisture and salt, shoots up earlier than the grasses. Small, and accustomed as they are, to this method of foraging, great numbers are destroyed annually. In this way they sink into the mud, and from the state of poverty in which the winter has left them, they cannot extricate themselves, and so they perish.

It will be naturally required of me, that I should, on such an occasion as the present, touch on the subject of abolitionism. I shall be very brief upon it, not from its want of importance or interest, but because I can refer you to an excellent work recently published in the Southern Journal, by Judge Harper; a work whose merits are inappreciable, and which should be in the hands of every Southern man, diligently to be read, and fully to be understood. I shall therefore indulge myself in but a remark or two. Let those *overwise intermeddlers with other men's matters*, shew me a better code of morals, or of higher authority, than the one delivered from Mount Sinai, which has formed from that day the constitution of the religious world, and I will then give heed to their arguments. What are the words of this instrument? Listen to them attentively. "Six days shalt thou labor and do all that thou hast to do, but the seventh day is the Sabbath of the Lord thy God; in it thou shalt do no manner of work; thou and thy son, and thy daughter, thy manservant and thy maid-servant, thy cattle, and the stranger that is within thy gates," &c. Who are these men and main-servants, and stranger? From whom, gentle-



men, can we get a better commentary, than from Moses himself; who received them, together with instructions, from the Great Author of all,—Moses, that great prophet, who formed his laws by direct commission, from Him who had the right to dispose of his creatures at will, and who, as we shall presently prove, ordained perpetual bondage as the lot of the greater portion of the world? For this purpose I shall quote you a few texts. Leviticus, xxv. 5, "And if the servant shall plainly say, I will not go out free, then his master shall bring him to the judges, he shall also bring him to the door; or unto the door post; and his master shall bore his ear through with an awl, and he shall serve him *for ever*." This you will remark is of the Hebrew, who as you will perceive by reference to the rest of the laws upon that subject, was more leniently treated than the stranger, in as much, as his was at first a voluntary entering into the state of slavery with a choice of masters, denied to the other; as thus: Leviticus, xxix. 44, 45, and 46, "Both thy bond men and thy bond maidens, which thou shalt have, shall be of the heathen round about you, of them shall ye buy bond men, and bond maids."

"Moreover, of the children of the strangers that do sojourn amongst you, of them shall ye buy, and of their families that are with you, which they begat in your lands, and they shall be your *possession*."

"And ye shall take them as an inheritance for your children after you, to inherit them as a *possession*; they shall be your *bond men for ever*."

These texts are so plain, that he must be voluntarily blind, who does not see and feel the conclusion to which they tend. But *these otherwise*, feeling the insecurity of the ground, should they contend that the Bible prohibits the bondage of the heathen: and thereby including almost all of Africa, resort to the plea of christian charity and benevolence. Knowing as I do the circumstances of these people amongst us, and at the same time fully aware of their condition in their own lands, my christian philanthropy would teach me to wish, that not only those who are here might remain, but did it comport with good policy otherwise, that every son of Africa could be transported to these Southern States. I believe as firmly as I do any other demonstrable truth, that it would be to their *benefit*, both temporal and eternal. But Garrison,

Tappan, and their associates, are tampering with a subject they do not understand ; the direct tendency of which is a separation of these United States. It will be impossible much longer, under existing circumstances, to maintain the integrity of the Union ; indeed it is already violated. In defiance of the express constitutional acknowledgment and guaranty of slavery as an institution, the subject is annually foisted upon our national councils. Perseverance in this wicked crusade against Southern rights, must result as I have just intimated. But I trust my friends, that *their zeal without knowledge*, will not lead *us* into the *fatal error* predicted by some, that of treating with harshness those who are under our charge. It would be the height of injustice to visit upon the heads of the innocent, the crimes of the guilty ; let us rather still, as heretofore, attach them to us by kindness and generous treatment—they are susceptible of the highest grade of gratitude and affection. A few words in the very interesting account given by a Mr. Fosdick, of his escape from the wreck of the Pulaski, that awful disaster, which has cost so many tears, are so pertinent to our subject, and so powerfully support me in the opinion just expressed, that you will pardon me, gentlemen, for delaying you with the extract : A negro was discovered preparing something of the kind (a raft or float) and on being asked what he was going to do, said, “I am going to try to save my master,” appearing perfectly regardless of himself.” Volumes could not add to the moral sublimity of the scene. My own experience is worth something. Born among slaves, and having owned them all my days, I can bear testimony, that when attached, they are happy, more industrious, more honest, and in consequence more valuable, and a greater source of satisfaction to their masters. They are by nature a happy people ; much more so than the white races—their care is less ; as is their forecast ; and with masters who will not indulge them too much, and thereby allow them to run into licentiousness, but will, under a well regulated system, the foundation of which is justice, so maintain the discipline of their plantations, as that the boundary of right and wrong, may be clearly perceptible—and where rewards and punishments are not the effects of caprice, but of established rule ; rule resulting from a just conception of that noblest of maxims, “do unto others as you would

that others should do unto you," they are, I sincerely believe, the happiest people upon earth. That there are exceptions, and that there are brutes of masters, here as well as in other sections of the world, is possible; but the temptation is less, or *self-interest* has lost its power. Who would voluntarily destroy, or injure his property? A madman might; but we are not mad, and until we are, that great principle *interest* alone, if no better existed, would be their safeguard. I would not indulge in invidious comparisons, but had we chosen to do so, how easy would it be to prove by incontrovertible testimony—testimony delivered in the parliamentary halls of Great Britain, and before the courts of justice in the Northern States, that there are conditions in life compared with which, slavery is a heaven. Read Walch's Appeal, and be satisfied of the fact.

Indulge me in one political reminiscence. The agitation of this subject in Congress so perseveringly, and for so long a time, forces it too much upon my mind to pass it by. It is this—and it is with heartfelt gratitude that I recall the action of our little State, when fearless of consequences to herself, whilst actuated by principles not only of sound policy, but fortunately of justice, she did so strenuously contend for, and manfully maintain, on the tariff question, the doctrine of State Rights. Under that banner is our only safety; this question will force every Southern man to rally around it; and we shall see the time, for it is at hand, when the banner shall be planted, whence it can never be removed. Those rights which the laws of God allow, and which the constitution of our country recognize, must and will be sustained, at all and every hazard. We would look in vain but to ourselves for succor; if we are but true to ourselves, we need not fear, we are sufficient for the task: on ourselves, and on ourselves only, we must depend.

I have confined myself, in this address, principally to a practical and candid review of the routine of duty on a cotton plantation. I have done so, because the cultivation of cotton is our chief employment; it is the business in which we are daily engaged, whereby we make our bread, and achieve our wealth, independence, individual happiness, and respectability. It is the source whence we derive the means of support for our religious, civil, and political institutions, and by which, under the bless-

ing of God, we hope to defend our rights, and advance our country in the great and growing struggle for throwing off the shackles of that commercial vassalage, which has too long and too successfully trammelled her exertions, and has kept her, as it were, in the leading strings, to States of antagonist interests—at least pecuniary, if not political. The age in which we live may emphatically be termed the age of enterprise; the Southern section of the Union has at last roused from her slumbers; the light of experience has at length dawned upon her, and a bright beam of intelligence has illumined and brought into view the great resources within her reach, for the creation of an entire independence of all sections of the world, save those which shall reciprocally depend upon her. Let a direct trade be established with Europe, the *mart* of all she has to sell, of all she has to buy. Let the great Western Rail Road, that gigantic enterprise, the admiration of the civilized world, annihilate space, and join in contact and familiar intercourse, sections of our country now divided by thousands of miles—and can she then need an intermediate depot, which, like a sponge, sucks in all but disgorges naught? Will her cotton and rice, tobacco and sugar, need to pay a transit duty so foreign to her interest, in commissions to factors, brokers, vendue masters, and a string of *et ceteras*, in ports whence the return cargo is but abuse, calumny, and detraction? In ports where the most strenuous exertions are made and making, to pull down and destroy her civil institutions, to fire her cities, to cry havoc, and let loose the dogs of war? where in fine, fanaticism, like an incubus, sits brooding over the prostrate multitude, exciting to madness by a false glare of perverted philanthropy, ignoble ignorance, fit tool for blood and slaughter? No my friends, I trust we have seen the day of better promise, the day when knowing ourselves and our capacities, we will exert them to the advantage of our own beloved country.

'Tis incalculable, the vast advantages which our supineness and want of vigilance has thrown, forced I may say, into the cities of the North. To the single city of New-York, I have heard it estimated, that sixty thousand Southern and Western merchants annually resort for their supplies. Estimating the average incidental expenditures of each of these individuals, in boarding, seeing shows, attending the theatres, &c., at but one hundred



dollars, and we have an aggregate amount of six millions of dollars, for which there is not the least return; which go entirely and exclusively to the embellishment and advantage of that city. Cannot a portion of this enormous sum be arrested here? Yes, undoubtedly, and a better time to make the attempt may never again offer; circumstances which have heretofore impelled, no longer exist,—the time has come, when by a proper exertion amongst our merchants, supported by the planting interest, a great if not an entire change, can be effected. Wise heads and busy hands are even now laboring to put into operation, schemes, which should they succeed, will resuscitate our once flourishing, now prostrate direct trade—rebuild our demolished cities, and make this section what the God of nature intended it—the garden of the world. Think not, gentlemen, this subject irrelevant to us; think not, that because you are not engaged in commercial operations, that therefore it is no concern of ours, whether they shall succeed, or whether they shall not. No patriot but must glow at the cheering hope of seeing the prosperity of his country; and who should be patriots if not those, who are as it were, identified with the soil—the landholders? Who should love his country most, he who has a stake in it which can never be removed, or he, who collecting his effects, can at a moment's warning be off, never to return?

The main support and dependence in all countries in time of trouble, must be on those who hold the lands, and cultivate them. So in time of peace; though the merchant, the civilian, the dapperwit, may ridicule their rusticity, their want of polish; may point out their inelegance, and sneer at their want of forms; yet without them, how soon would gaunt poverty, with all her train of ills, gnaw into their very vitals. But there is no jealousy in the heart of the planter; he feels that all of these are necessary to his comfort, and lets their sneering pass; he knows their mutual dependence one upon the other, that agriculture, commerce, manufactures and mechanics, form links for mutual support, and that by their joint exertions, man's condition is elevated, the arts and sciences flourish, the great theatre of the world is embellished, civilization, with all her inestimable blessings, pushes out ferocious barbarism, “and the desert is made to blossom like the rose.” He knows and feels, that a beneficent

providence has made a diversity of interests, and given for their proper development a diversity of talents, designs and desires ; which although apparently diverging from each other, yet, in course of time, concentrate in general benefit. This knowledge expands his mind, makes his heart the seat of genuine charity, and his house the abode of hospitality. Proud and distinguishing characteristics—we received them from our fathers, let them descend to our children.

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### *Cultivation of the Mulberry.*

Charleston, July 20th, 1838.

*Mr. Editor,*—Having had my attention called some years ago to the cultivation of the mulberry, and raising the silk worm, I was induced to make some inquiry during my travels in Italy subsequently, as to the probability of success, if it were attempted in our State. I have observed all that I could see about the cultivation of the mulberry in the Piedmontese territory, and in the Milanese, which is so famous for its silks ; and the last time I was in Milan, I bought every treatise that I thought would throw any light on the subject. I am fully satisfied, from all that I have read on the subject, that it is destined to supplant the short cotton in our light and pine barren lands, because it is more profitable in every respect ; it requires less capital to commence ; less time to yield a return ; requires less land and less labor, and yields a more profitable and more certain return.

In Italy, four varieties of the mulberry are cultivated. The white and black, as stock and graft ; for the Italians graft all their white mulberries, believing that grafted trees yield more leaves ; *Morus Multicaulis*, which they call mulberry of the Phillipine Islands, or *Morus Cucullata* (of Bonafous) and the *Morus Moreltiana*, or true Chinese Mulberry. The introduction of the *Morus Multicaulis*, has met with many more obstacles there than here, on account of the prejudices of the ignorant, and the selfishness of those interested in the culture of the *Morus Alba*, or common white mulberry ; and instances are mentioned of whole plantations of the *Morus Multicaulis*

having been dug up and thrown or given away, by wealthy proprietors, from the misrepresentations of their stewards or managers.

As yet, the *Morus Multicaulis* has not, I believe, given seed in this country, and seed cannot be bought, and the cuttings are expensive, and cannot always be procured from want of conveyance to some parts of our State. The white mulberry requires to grow four or five years from the seed, before it can bear even a partial stripping of its leaves for feeding silk worms, and is not easily propagated otherwise, and when grown, becomes so tall, that it is the work of grown persons, (if not of men alone) to strip the leaves, and yields much less to the quantity of land. The *Morus Moreletiana* (so called from a professor Morelet, of Italy) is propagated from seed, which costs no more in Italy than the white, can be stripped a little the second year from the seed, is easily propagated (but less so than the *Morus Multicaulis*) from cuttings, does not require to be grafted, never grows, I believe, above 15 or 20 feet, branches at the ground, bears leaves excellent for the silk worm, though smaller than those of the *Multicaulis*, and probably not quite so good; the leaves are large and easily gathered, and the tree acquires its growth and bears fruit at two years old. If what is stated by Mr. Mey, formerly of this city, upon the authority of Mr. Noisette, of Paris, in an extract of a letter of his, published some months back in one of the numbers of your journal, prove true about the *Morus Multicaulis*, it will certainly be a great objection to it, though it will not, nor cannot entirely stop its cultivation. Last September or October, I had about an hour's conversation with Mr. Noisette, part of which was upon the subject of the mulberry and silk, and though he expressed himself convinced that there were other varieties of the mulberry better suited to cold climates, particularly the neighborhood of Paris, than the *Morus Multicaulis*, yet he said nothing about what Mr. Mey states. In conversation with Mr. J. D. Legare, formerly Editor of the *Southern Agriculturist*, about Mr. Mey's letter, he mentioned that he had had a plant of this variety growing in the country for several years, (I think he said 5 or 6 years) without any care having been taken of it, and when afterwards he looked for it, no vestige of it was left; but whether it had died, been killed, or removed, he did not know.

The following is an extract of a letter from the house of F. Burdin ainé & fe, of Milan, received last winter.

"Over and above all the plants in the bill, you will find a certain number, which I beg you to accept as a mark of my respect, and among which are comprised 100 plants one year old, of the white mulberry, var. Moreltiana or Chinese, the most precious variety for cultivating as standard trees, and which I beg you to transplant with *good* care, in order that you may be able to judge of this magnificent variety, which is far superior to the common white mulberry, and which unites also the advantage of not requiring to be grafted, its leaves being naturally very large, and excellent for silk worms. After you will have acknowledged its merits, it will without doubt please you to receive a quantity of young trees to enrich your country, which I can furnish you at the very low price of 30 francs per thousand, such as the sample I send you."

The plants are from 18 to 24 inches high, and although shipped from Leghorn the 4th of December last, along with many other plants, and not received here until the 6th or 8th of June, they and the *Morus Multicaulis* are the only plants which survived in any number, and are growing side by side in a friend's garden near me, until I can carry them into the country next fall.

About six years ago, as I was passing through Milan, I purchased at this house an ounce of this seed, for 5 francs, under the impression that it was the *Morus Multicaulis*, (as we commonly call this variety the Chinese mulberry) and sowed some of the seeds in a box in the spring of 1833, when I returned home. I left the plants in the box without ordering any care to be taken of them, and in the fall, I found the largest plants only about the height of a goose quill. In the spring of '34, I replanted them in a poor piece of land that was infested with nut grass, and when I went into the country in the fall, the largest trees were about 12 feet high, and about 4 or 5 inches in diameter, just above the ground, and branching into 5 or 6 large branches, at 5 or 6 inches from the ground. In the spring of 1835, they were full of fruit, which ripened about the middle or end of April. They put out the earliest of all the mulberries, (except the *Morus Multicaulis*, which I have not yet cultivated) and retained their leaves



until late in December with me, on a sea island, and warm situation.

If any person or persons engaged or about to engage in the silk culture, wish one or more of the trees, I will give them with pleasure, as my object is chiefly to introduce it into my native State, believing it, all things taken into consideration, the most valuable variety of the mulberry for silkworm feeding. Persons in the city wishing to compare the leaves of the Moreletiana with the Multicaulis, can easily do so, as I have plants of both kinds growing near each other, where circumstances are rather more favorable to the Multicaulis; or the plants themselves can be seen by application to me through you.

In conclusion, Mr. Editor, allow me to say that I have not the smallest desire to see my name in print, but if you think that it will give any weight to my statements, or tend in any way to promote my wish, you are at liberty to use it.

I remain yours, very respectfully,

ROBERT CHISOLM.

We avail ourselves of Mr. Chisolm's permission to use his proper signature, for two reasons—first, because his communication proves he was far from being unmindful of one of the great objects of foreign travel; the good of his own country; second, because all communications are better entitled to consideration when vouched by a responsible name; this is particularly true, of all such as recommend the diversion of capital and labor, to new objects.—ED.

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*Ploughing.*

It is a common objection against ploughing, particularly among planters in the lower districts of South-Carolina, that it injures the soil; while some contend that it does injury only where the soil is thin. But these objections appear to me to be equally fallacious. The latter objection is founded upon the fact, that clay or earth is turned up over the soil, which ought rather to be a protection than otherwise from the influence of the sun and air; and the combination of the earths with the soil, par-

ticularly if there is any calcarious earth in the land, would render each more available to the plant. Suppose on the other hand the hoes to be exclusively used, and suppose (by way of illustration) they were never suffered to penetrate below the soil; then there would be nothing but soil exposed to the action of the sun and air. And would not that system impoverish and exhaust the land sooner, than if the earths and the soil were combined? In a deep soil, such as neither the plough or the hoe can reach the clay, there would be the same objection to either. The exhaustion depends not so much upon the depth to which the ploughs or hoes pierce the ground, as upon the frequency with which the moist earth and soil are turned up to the influence of the sun and air. The greatest injury which deep ploughing can do, is to cause low lands to be more liable to excessive saturation with moisture in rainy seasons. It may be objected, that it is necessary for the hoes to work the land over after the ploughs, thereby giving two workings in the place of one. But I answer, that it is only necessary for the hoes to complete what the ploughs were unable to effect, and the work will then be so perfect and full, that there will be no occasion to work the land and stir the soil quite so frequently, as though the hoes alone were used.

TWIP.

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*Farmer's Register. July, 1833.*

The first article furnishes pleasant reading, and belongs to a class of papers, for which a decided preference has been frequently expressed in this journal. County surveys, by an intelligent practical agriculturist, are, beyond comparison, the most useful pages of an agricultural publication. It has been difficult to maintain for any length of time in our District Societies, as much spirit and animation as they set out with. The reason may perhaps be found in the exhaustion of common topics, and the scanty supply of new subjects of interest to them. It is proposed as a resource, that among their Committees, one should be nominated to survey their own, and the adjacent districts, in successive years. The reports of such surveys shall be always welcome to this journal.

*Art. 2*, seems an appendix to the first. It gives the result of J. B. Sinclair's management of an ill-conditioned farm in the district surveyed. The general character of his management was a successful pursuit of profit, without embellishment or exactness. His stock of hogs is worth attention.

"Besides the grazing of other farm-stock, there is a large number of hogs fed on clover, from the time it is 6 inches high; and as I heard a neighbor of Mr. Sinclair's charge him with, in some jocular censures of his management, he does not even give his clover a chance to get into blossom. The hogs are not, however, turned upon the whole field, but upon a part separately inclosed by a temporary or moveable fence; and from that they are changed to another, and so on, so as for them to graze all the allotted space in succession.

"If about 100 hogs are desired for annual slaughter, then 20 female pigs are left as breeders, and three or four male pigs. It is so arranged that all the pigs are littered in April or early in May, soon after the hogs have all been put upon the young clover. The births are easily thus timed, as the practice is to castrate all the boars soon after the sows are pregnant, and to fatten and kill them, and all the sows also that have had pigs once, the next winter. Thus there is an annual succession of very young breeders, male and female, and no hog ever remains to be as old as two years. Of course there are but the 20 sows, all pregnant, to feed, from killing time to the beginning of grazing on clover, after which, they have no other food, except the gleanings of the wheat, and other small grain fields after harvest, until put up to fatten in autumn. For five years there had been killed from 75 to 108 hogs annually; not large, of course, but fat, and of good size for family bacon. The annual sales of pork add largely to the income of the farm. In 1835, the fresh pork sold brought \$1200, and the weight of the hogs averaged 133 lbs.

Mr. Sinclair made an experiment last winter and spring with his winter-kept hogs, or breeders, which, so far as one experiment may be relied on, seems decisive against letting hogs run at large in woods and marshes, to aid in supporting themselves. In the beginning of winter, the hogs were divided into two parts, as nearly equal as possible in numbers, sizes, and condition. Those of one division, were suffered to run at large, in the sea-pine woods, and having access to the close adjacent bay shore, and 300 acres of firm marsh; and received every morning each, one ear of corn, and another at night; or, when shattered corn was used, as much morning and evening as was supposed to be equal to one ear to each hog for each meal. The hogs of the other division were confined to a well littered pen, in which was a close and dry house or shelter, which they could enter at pleasure, and be perfectly protected from wet and cold. These could get no feed except what was given to them; and that was the same as was given to the others, that is, one ear of corn to each, twice a day. They probably helped their food somewhat from the litter of corn-stalks and wheat-straw, which I suppose were the kinds furnished in part or in whole. The result was, that in spring, when the clover was fit to receive them, the pen-fed hogs were in much the best condition. Some of the others, running at large, had actually died, and all that lived were poor and lousy.

"Now it must be admitted that the want of precision in fixing the quantities of food given, (though *designed* to be equal, and supposed to be as nearly so as such mode of estimating permitted) detracts much from the otherwise very important value of this experiment. Still, it can scarcely be supposed that one who is so careful, and so successful, in his general management of hogs, could have been much deceived in the details of this experiment, in which, and in the apparent result of which, he has entire confidence. It should be further considered, that if cooked, varied and mixed food, of roots and other vegetables, as well as grain, had been given to the confined hogs, that there is no question but their health and flesh would have been better sustained, at equal or less cost, than by corn alone.

"The hogs are all of a cross of the "no bone" breed upon the common kind; about half-blood of each, which is deemed preferable to the pure no-bone stock. The front edge of the cartilage with which hogs root into the ground, is trimmed off, which entirely stops their rooting."

*Art. 4.* Analysis of Santee marl, which, with the exhortation attending it, may be profitably dwelt upon by our readers.

The Editor ventured a sweeping condemnation of those who look for profit in the selection of seed; he is met by one of his correspondents on the question, which it seems has two sides, and the strongest against him. Our unhappy brother finds himself involved in the necessity of unsaying his rash opinion; while he insists upon his consistency as sturdily as a politician who may happen to prefer the reputation of far-sighted wisdom, to a frank confession of mistake. The examples of benefit from the selection of seed, are too numerous and too familiar to daily observation, to leave a doubt that much depends upon it. Sometimes the opinion has been placed in unnecessary contrast, with the acknowledged advantage of an occasional change of seed from one climate or kind of soil to another. Which is productive of the greatest good, is not very easily determined. But there is no very plausible reason why both means of improvement should not be combined. For example, corn very fruitful in ears, or bearing ears of an extraordinary size, may be simultaneously cultivated in situations distant and differing from each other, and mutual exchanges profit both parties.

One always takes leave of the *Farmer's Register* with regret.

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## PART II.

### SELECTIONS.

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#### *Soil.*

[FROM THE NEW-ENGLAND FARMER.]

We can have no doubt that we shall both gratify and instruct many of our agricultural readers by the subjoined selection from the Code of Agriculture of Sir John Sinclair, on the subject of Soils. The treatise is not unknown among us; but to many it is not easily accessible. Every thing that came from his pen on the subject of Agriculture is of high authority and practical importance. He treats the subject in that plain, popular manner, which renders it intelligible to all readers.

The surface, or outward coating of land, usually consists of various earthy matters, with a mixture of animal and vegetable substances in a state of partial decomposition, together with certain saline and mineral ingredients. Where favorably combined, it is admirably calculated to afford support to plants, to enable them to fix their roots, and gradually to derive nourishment by their tubes, from the soluble and dissolved substances contained in the *soil*, (as this mixed mass is called,) or passing into it. The strata on which it is incumbent, are known under the general name of *subsoil*.

The importance of the soil has been described in various ways. By some it has been called the mother, or nurse of vegetation. By others it is represented as discharging functions to plants, similar to those which the stomach does to animals, in preparing their food, and fitting it for absorption by their roots. It furnishes the plant also with heat; for a well cultivated, and highly manured soil, is much warmer than the surrounding atmosphere. The farmer it is said, ought to study the relative value of the different soils, as the merchant does the worth of the several commodities he deals in. In short, a favorable *soil* and climate, are declared to be, the first riches of a country.

The importance of a farmer's paying particular attention to the nature and quality of the soil he cultivates, need not therefore be dwelt upon. By availing himself of the qualities it possesses, or by removing its defects, his profits are much increased. He must, in general, regulate his measures accordingly, in regard to the rent he is to offer, the capital he is to lay out, the stock he is to keep, the crops he is to raise, and the improvements he is to execute. Indeed such is the importance of the soil, and the necessity of adapting his

system to its peculiar properties, that no general system of cultivation can be laid down, unless, all the circumstances regarding the nature, and situation of the soil and subsoil, be known; and it rarely happens if a farmer has been long accustomed to one species of soil, that he is equally successful in the management of another.

Soils may be considered under the following general heads:—Sand;—Gravel;—Clay;—Chalk;—Peat;—Alluvial; and,—Loam, or that species of artificial soil, into which the others are generally brought, by the effects of manure, in the course of long cultivation. After describing each sort, it is proposed to state, the modes of improving their texture; the crops for which they are respectively calculated; and the districts where they are cultivated with the greatest success.

1. *Sand*.—A soil that consists entirely of small grains of a hard nature, (silex,) which neither cohere together, nor are softened by water, nor soluble in acids, though it ought not to be totally abandoned, yet it is too poor to be cultivated with advantage. It would indeed be hazardous in the extreme, from the risk of having the covering mould blown off the new-sown grain, in the spring, by high winds. Sandy soils, however, generally have a considerable mixture of other substances, by which their quality is greatly ameliorated.

The best mode of improving the texture of such a soil, deficient in retentive or adhesive properties, is, by a mixture of clay, marl, sea-ooze, sea-shells, peat or vegetable earth; and it frequently happens, that under the sand itself, or in its immediate neighborhood, the very materials may be found, so essential for its improvement.

In some parts of Norfolk, they have availed themselves of these auxiliaries, for improving a sandy soil, in an eminent degree; by means of which they have created a new soil; and by the continuation of judicious management, they have given a degree of fame to the husbandry of that district, far surpassing that of others naturally more fertile.

The improvement of a sandy soil, is generally accomplished by fossil manures; but vegetable substances are likewise effectual; A top dressing of peat has been tried for that purpose, and the experiment was attended, not only with immediate good effects, but with permanent benefit.

Sandy soils are valuable, being so easily cultivated, and so well calculated for sheep, that most profitable species of stock. Where the land is hilly, rabbits are frequently kept, for the rabbit can easily throw down the light soil from the hole he excavates, where there is a declivity. Hence it has been remarked by some that *loose-soiled hills*, will pay better in rabbit-warrens, than under any other mode of occupation. Others consider planting to be a more profitable appropriation of such hills.

Rich sandy soils, however, such as those of Frodsham, in Cheshire, under a regular course of husbandry, are invaluable. They are cultivated at a moderate expense; and at all seasons, have a dry soundness, accompanied by moisture, which secures excellent crops even in the driest summers.

The crops raised on sandy soils are numerous, as the common turnip,—potatoes,—carrots,—barley,—rye,—buckwheat,—pease,—clover,—sainfoin and other grasses. This species of soil, in general, has not strength enough for the production of Swedish turnip, beans,

wheat, flax, or hemp, in any degree of perfection, without much improvement in its texture, the addition of great quantities of enriching manure, and the most skilful management.

When under a course of cultivation, it is a great advantage to sandy soils, either to fold sheep upon them, or to consume the crops of turnips upon the ground where they are raised. These practices greatly contribute to the improvement of such soils, not only by the dung and urine thus deposited, but by the consolidation and firmness of texture which the treading of the sheep occasions.

The carrot husbandry, in the "Sandlings" of Suffolk, as they are called, is one of the most interesting objects to be met with in the British agriculture. After defraying all expenses, the clear profit, by feeding horses in the stables, is considerable, (5*l.* 9*s.* 6*d.* per statute acre.) Some prefer to fatten bullocks with them; while others, who have the advantage of water-carriage, think it most beneficial to send their carrots to the London market. Carrots are likewise an admirable preparation for other crops.

In Norfolk and Suffolk, it is found that poor sandy soils, not worth 5*s.* per acre for any other purpose, under sainfoin, will produce, after the first year, about two tons per acre, of excellent hay, for several years, with an after-grass, extremely valuable for weaning and keeping lambs. How much more beneficial than any crops of grain that such soils usually yield!

In the neighborhood of Dunbar in Scotland, there are some farms originally of a light sandy soil, which have been rendered uncommonly productive; but they are situated on the coast, and accommodated with immense quantities of sea-weed. For many years they were cultivated in the following course of severe cropping. 1. Turnips; 2. Drilled wheat; 3. Clover; 4. Drilled wheat. By cultivation the soil has now become a species of light loam.

The management of sandy land, according to the system adopted by the celebrated Duckett of Petersham and Esher, in Surry, has been strongly recommended by an eminent author. It was founded on three principles: 1. Ploughing very deep: a due degree of moisture was thus preserved in his light land, by means of which his crops were flourishing in seasons of drought, which destroyed those of his neighbors;—2. Ploughing seldom, but effectually, by a trench plough, or what he called a skim-coulter plough, with which he buried the weeds that grew on the surface; he has been known to put in seven crops with only four ploughings; and, 3. Occasionally raising a crop of turnips the same season, after a crop of wheat or of pulse.

In the Pays de Waes in Flanders, sand is likewise cultivated to great perfection. The soil of that district, which was originally a barren white sand, by a slow but sure process, has at last been converted into a most fertile loam. The surface to the depth of three or four inches, was at first alone cultivated, but the soil was gradually deepened, as it became progressively enriched; and now the ground at the commencement of every rotation, is trenched by a *shovel*, (the soil being very loose,) to the depth of from fifteen to eighteen inches, the exhausted surface is buried and the fresh soil brought up; enriched by the manure washed down to it, during the seven preceeding years. It is then subjected to the following course of crops: 1. Potatoes; 2. Wheat manured, sown in November, and carrots in February, for a second crop in the same year; 3. Flax, manured, and sown with

clover seed, for the next crop; 4. Clover; 5. Rye or wheat, with carrots for a second crop; 6. Oats after the carrots; and, 7. Buckwheat; at the end of which period the ground is again trenched.

The double crops raised in the sandy soils of Flanders, in the course of the same year, are attended with much advantage. The Flemish farmers thus obtain a greater quantity of manure, than they could produce under any other system, by which they are enabled to extract so much produce from soils, originally sterile, and which would soon revert to their former state of barrenness, without the greatest industry, and the most unwaried attention.

It is a rule, in regard to sandy soils, never to pick off any small stones that may be found in them, as they contribute to prevent evaporation, and to preserve moisture. It is another rule, frequently to renovate the strength of such soils, by laying them down with grass-seeds, and pasturing them for a few years, as they are so apt to be exhausted by erosion, if corn crops are too frequently repeated.

It may be added as a general rule, that the fertility of sandy, or siliceous soils, is in proportion to the quantity of rain that falls, combined with the frequency of its recurrence. As a proof of this in the rainy climate of Turin, the most prolific soils have from 77 to 80 per cent of siliceous earth, and from nine to fourteen of calcareous; whereas in the neighborhood of Paris, where there is much less rain, the silex is only in the proportion of from 26 to 50 per cent in the most fertile parts.

2. *Gravel*.—Gravelly soils differ materially from sandy, both in their texture and modes of management. They are frequently composed of small soft stones, sometimes of flinty ones; but they often contain granite, limestone, and other rocky substances, partially, but not very minutely decomposed. Gravel being more porous than even sand, is generally a poor, and what is called, a *hungry soil*, more especially when the parts of which it consists, are hard in substance and rounded in form. Gravelly soils are easily exhausted, for the animal and vegetable matters they contain, not being attracted by the earthy constituent parts of the soil, which are seldom sufficiently abundant for that purpose, are more liable to be decomposed by the action of the atmosphere, and carried off from them by water.

Gravelly soils are improved by draining, where they are troubled with springs;—by deep ploughing;—by mixing them with coats of clay, chalk, marl, peat, or other earth; by frequent returns of grass crops;—by repeated applications of manure;—and by irrigation, if the water be full of sediment, and judiciously applied on a proper form of surface.

Sometimes the ground is so covered with flints and stones, that hardly any mould is to be seen. Land of this description is very troublesome to work, and is injurious to the implements of husbandry employed in the cultivation; but with proper management, it can be rendered highly productive.

The *stone-brash*, or *com-brash* soils, (as they are provincially called) of Gloucestershire, and the midland counties of England, may be included under the general head of *gravelly soils*, being so much mixed with small stones. They have frequently, however, more sand, or clay or calcareous loam, in their composition, than gravelly soils usually possess, and on that account, are treated of by some authors as a distinct species of soil.



Gravelly soils, from their parting so readily with moisture, are apt to *burn*, as it is called, in dry seasons: but in wet ones, they usually produce abundant crops of barley, rye, tares, pease, oats, and even wheat; and even a thin stratum of gravel, if mixed with shells and other marine productions, possesses many advantages for cultivation in a wet climate.

A gravelly soil, free from stagnant water, gives such an additional warmth to the climate, that vegetation is nearly, a fortnight earlier, than where other soils predominate. About Dartford and Blackheath in Kent, such soils produce early green pease, winter tares, rye, autumnal pease, and occasionally wheat in great perfection.—When barley and oats are cultivated, they should be sown *very early*, that they may have full possession of the ground before the dry season sets in. Gravelly soils in a wet climate, answer well for potatoes; and indeed, in Cornwall, in a sheltered situation, with a command of sea-sand, and of sea-weed they raise two crops of potatoes in the same year.

Poor gravelly soils, full of springs, and those sulphurous, are very unfriendly to vegetation; and are better calculated for wood than for arable culture.

3. *Clay*.—A clay soil is distinguished above every other for tenacity. It feels smooth, and somewhat unctious. If cultivated in a wet state, it sticks to the plough like mortar, and does not soon become dry. It is often, indeed, of so adhesive a nature, that it will hold water like a dish. In a dry summer, the plough turns it up in great clods, scarcely to be broken or separated by the heaviest roller. It requires therefore much labor to put it in a state fit for producing either corn or grass: and though it will yield great crops, yet being cultivated at a heavy expense, unless when occupied by a judicious attentive farmer, it is seldom that much profit is obtained. The very superior management of clay soils, as practised in the Lothians, is fortunately an exception to this general rule.

The value of a clayey soil, depends materially on its having an open subsoil, which renders it more tractable and productive. Its texture is improved by a suitable mixture of common sand, sea-sand and above all, of limestone gravel, where it can be obtained. Peat moss also, that has for some time been dug up, and exposed to the action of the atmosphere, may be used with advantage. It is likewise necessary to enrich it with putrid and calcareous manures in the course of its cultivation.

Under proper culture, clay soils are well calculated for growing crops of beans, wheat, oats, clover, and winter tares; but not for barley, unless immediately after a fallow; nor for turnips or potatoes, unless under very peculiar management. Cays become good meadow, though from their aptitude to be poached, they are, in general, unfit to be fed by heavy cattle in wet weather; but they do well for hay, or soiling. The after grass may be used to feed neat cattle till October, and sheep till March. A stiff clay, however with a strong marl under it, is preferred in Cheshire and Derbyshire for the dairy.

Ploughing previous to winter's setting in, is of great use to clays, by exposing the surface to the frost, which mellows and reduces it in a manner infinitely superior to what could be accomplished by all the operations of man. In this state the soil remains till spring seed-time, when it is either ploughed with a shallow furrow or scarified and sown.

In respect to fallowing strong clay, a (subject to be afterwards more fully discussed) though some eminent farmers think it unnecessary, provided particular attention be paid to the bean crop, sowing early, horse hoeing regularly, and weeding completely; yet there certainly are many clay soils, more especially in Scotland, so tenacious and obdurate, so adhesive to every thing that comes in contact with them when wet and assuming, when dry, such a stony hardness, that they are but ill calculated, in that stubborn state, for the purposes of vegetation. In that case, a summer fallow is indispensably necessary every six or eight years; both to prevent such soils contracting a most injurious sourness and adhesion from wet ploughing, and in order that, by exposure to the sun and winds, during the summer months, they may be so thoroughly pulverized, as to be placed in a state fit for bearing abundant crops of grain and grass. There are certain soils, and situations, indeed, *where summer fallowing cannot be advantageously relinquished for any other process of tillage whatsoever.*

4. *Peat.*—This substance is unquestionably of vegetable origin. The difference between it and vegetable mould is this, that mould is derived from finer substances, as the leaves of the trees,—the remains of arable cultivation,—and the roots as well as the leaves and stalks of the finer grasses, which contain a large proportion of earthy matters; whereas peat is chiefly composed of various sorts of aquatics; which, instead of rotting on, or near the surface, are generally immersed in stagnant water, and only partially decomposed. In valleys, peat moss has often a considerable proportion of vegetable earth washed from the higher grounds.

[To be continued.]

### *On the value of Human Excrements as Manure.*

[From Dr. Granville's Report to the Thames' Improvement Company.]

This very question having been submitted a few years since to the consideration of the late Professor Hembstadt, of Belin, by the Saxon and Prussian authorities, who were desirous to apply the contents of the city drains and cess-pools to the recovery of barren and sandy lands, in the environs of Belin and Dresden—that eminent agriculturist undertook, in conjunction with other learned men and practical farmers, a series of experiments which were carried on for a great length of time, and were varied in every possible way, in order to avoid all sources of fallacy. The results of those experiments, Hembstadt afterwards published, and they led to extensive agricultural operations, all of which proved successful. Professor Scutbler, the writer of the most esteemed and certainly most able 'Treatise on Agronomia,' or the best mode of knowing and treating ever species of land, repeated and added to the experiments of Hembstadt, from which he obtained alike results. These he published in a tabular form, which has since passed into the hands of all the large practical farmers in Germany, and have formed the basis of instruction on manuring, in the hands of professors of agriculture, whom many of the continental governments have, with infinite advantage, established in institutions purposely formed to disseminate useful and practical truths in the art of farming. From that table the following facts may be collected.

If a given quantity of land sown, and without manure, yields three times the seed employed, then the same quantity of land will produce.

5 times the quantity of land sown, when manured with old herbage, putrid grass or leaves, garden stuff, &c.

7 times with cow dung,

9 times with pigeon's dung,

10 times with horse dung,

12 times with human urine,

12 times with goat's dung,

12 times with sheep's dung, and

14 times with human manure or bullock's blood.

But if the land be of such quality as to produce, without manure, five times the sown quantity—then the horse dung manure will yield fourteen, and human manure nineteen and two-thirds the sown quantity.\*

In addition to this information, it was ascertained that the most important crops—those, I mean, which yield most profit—such as flax, for example, so extensively cultivated in both Flanders, can only be obtained in abundance, and of the finest quality, by employing human manure.

But by far the most important point of practical knowledge in this matter, put forward by the same great authorities, and the truth of which was afterwards confirmed to me by more than one great farmer in East Flanders, is, that while the manuring with human soil has produced fourteen times the quantity sown, where horse dung has yielded ten—the proportion of the human or Flemish manure employed, was to that of the horse dung, as one to five only; so that with one ton of the Flemish, a larger produce is obtained, than with five tons of stable manure. These indisputable truths being once ascertained, let us see how they would work practically in this country.

In England a ton of good stable manure sells for five shillings. Now an acre of arable land in an ordinary state of cultivation in England, is manured with 20 tons of horse or stable dung every fourth year, according to Professor Coventry, and consequently entails an expenditure of £5 in that year. It then produces ten times the quantity of wheat sown. But an acre of the same land, similarly sown and manured with Flemish manure, would require only four tons of it; and entail, at the price we have fixed for that manure, an expense of £2 8s. It would, then, produce fourteen times the quantity of wheat sown.

Supposing the produce of acre manured with horse or stable dung to be five quarters of wheat † and sell for £15, that of the acre

\* It is curious how this corresponds with one of the experiments made by Mr. Burrows, an intelligent Norfolk farmer, who received the gold medal from the Society of Arts, for them. On four acres of broadcast wheat, Mr. Burrows obtained 14 quarters and a fraction of wheat, having employed one quarter as seed. Had he manured his land with Flemish manure, instead of 14 quarters, he would have obtained 19·2·3 quarters for the one he employed.

† This is assuming a most favorable return, since I find in a report on the "Alotments," in the parish of Missenden, (as a fact of which they seem proud) that the land would, under the plough, in an average year, produce only 20 bushels of wheat, or 2½ quarters: and even Mr. Burrows, in his first-rate experiment of four acres of drilled wheat, obtained no more than sixteen quarters and three bushels,

manured with Flemish manure, will be seven quarters, and sell for £21.

The end of this comparative farming operation therefore would be,  
 1st, a saving in manure, - - - - - £2 12s. per acre,  
 2nd, a surplus produced, - - - - - £6 0s. do. in money,

Total £8 12s. per acre.

A sum which the employment of the Flemish manure would put into the pocket of the farmer, above the largest numerical result he can obtain by his mode of cultivation. Thus far as to his private interest; but in this operation the public would also be a gainer inasmuch as by means of it, two more quarters of wheat per acre would be sent into the market—a circumstance, which in the year 1832, would have prevented the necessity of importing into this country 463,502 quarters of foreign wheat, as appears from a return made to an order of the House of Commons in 1833.

But even this marvellous result of Flemish manuring, in the cultivation of wheat lands, falls into insignificance, when compared to that which it yields when applied to other cultivations, the produce of which, as I ascertained by minute personal inquiries at some of the largest farming establishments in Belgium, instead of being nine only, above the ordinary produce, as before mentioned, rises as high a 12, 15, 20 and even 40 per arpent. The same may be said of it, when applied to lands completely barren, and which, having been originally rented for one florin the arpent, have, in the course of four years, been improved, through Flemish manuring, into an easy rent of 30 florins per arpent. Examples of this sort are numerous, and many such were furnished me by the authorities at Brussels' La Haye, Rotterdam, and Berlin.

### *Taming Wild Horses.*

[FROM THE AMERICAN TURF REGISTER.]

Having announced some months since, that the editor of the *Turf Register* had become possessed of the secret for taming wild horses, some publication of the results of our experiments, has been of course expected, and we now proceed with a statement of facts. We must premise, that there is no man who detests quackery in all its forms, or that abhors more thoroughly the witchery of *charms*, than does the writer of this. It was this contempt for empiricism, that kept him for some years from even listening to the reports of 'taming wild horses' in a few minutes, by aid of some secret means; and when the high respectability of the reporters was forced upon him as a voucher for the

making four quarters and less than one bushel per acre. Now I have it in my notes taken under the distation of Mr. Smet, a great farmer in East Flanders, that a measure of wheat land corresponding to an English acre, manured with Flemish manure, produced last year 7½ sacks of wheat of the best quality. The sack contains four measures each, weighing 180 lbs. of 16 ounces; consequently there grew upon that acre 5,400 lbs. of wheat. Whereas, taking the Winchester bushel of wheat to weigh 60 lbs.; the acre of wheat land among the "Alotments" at Missenden, produced only 1,200 lbs. and the experiment of Mr. Burrows 1,980 lbs.; while admitting even my assumption of five quarters to be correct, the acre in England would yield no more than 2,400 lbs., being less than the half of the Flemish produce.



correctness of the reports, the same feeling compelled him to attribute those wonderful results, to delusion, to the practice of which, respectable men are as liable to become the dupes as any others. At length, a report came from a source, which could not be doubted, either on the score of respectability, or the supposition of delusion—the reporter practiced with his own hands, and witnessed the results with his own senses, (see *Turf Register*, vol. viii. page 261, 262, 263, and 500.) We then determined to obtain the arcanum and try it ourselves. We have done so, and we are convinced. We shall now state a few facts. Having had no opportunity of course, to try it on *wild horses*, our experiments have been confined to baulky horses, and we have had but three chances even with them, and they were accidentally met with, and of course we were not *duly* prepared. A friend was found in the street with one of his carriage horses refusing to go. It was an old trick of hers, (it was a mare,) and in a ride of two miles, she had stopt several times, laid down in the road, and acted the stubborn and sulky brute in all its characters. When we found him, our friend was stuffing the animal's ears with soft paper; he had whipped the brute till he was tired, the paper was speedily shaken out by the animal. We approached the mare, asked our friend to desist from further efforts, saying the mare would go presently, at the same time applying the arcanum slightly, but not perceptibly to any of the by standers. In less than ten minutes, I told my friend I thought she would go; he took the reins, she went off handsomely, travelled seven or eight miles out, returned in the evening, and exhibited no more signs of baulking. We have not heard whether the animal has baulked since; but should not be surprised if it did, as the operation was very slight and imperfect, from our not being properly prepared. The other two cases were both alike precisely, at different times. They were horses with heavy loads of wood on carts, at the foot of the long hill in Charles street. We found the drivers whipping and beating them with the butt of their whips over the head, and the horses in a perfect frenzy from fear. We prevailed on the drivers to rest the horses, put up the shafts, approached gently their heads, patted them, and applied the arcanum slightly, (being unprepared.) In about five minutes the horses were perfectly composed, and we then told the drivers to take the reins, and start them, but not to let the horses see the whip. They both started handsomely, went up the hill to the top with perfect ease, and without the slightest symptom of a baulk. The crowd of negroes standing around were greatly surprised, and expressed their feelings in loud tones. Now in relation to all of these cases, it may be said, that the change of treatment from an extremely severe, to a mild and conciliatory course, would naturally produce the same result, and therefore, we are not left to the necessity of attributing it to a cause so mysterious as the pretended arcanum. We confess these were precisely our own reflections almost reduced to conclusions, until we had an opportunity of applying the same treatment *without* the arcanum, which had no effect whatever; and before we could return and supply ourselves with the remedy, the horse had been taken out and sent away. But a gentleman on the Eastern Shore of Maryland, has made four experiments with it, much more satisfactory and important than our own. We shall give the description of them in his own

words, premising that there is no gentleman in our state who stands higher in the estimation of good men than he does.

*1st Experiment.*—‘I have a horse that had stopt at a particular hill two or three times. In every other respect, perfectly gentle and kind. When I got to the hill the horse halted, I got out, applied the arcanum, gave him the word, and he moved off instantly. It appeared to me, that he went with more spirit afterwards than usual.’\*

*2d Experiment.*—‘My next experiment was on a BULL. It was for the most part satisfactory. We had to throw a rope around his horns and draw him up forcibly to a post and secure him. For some time pending the operation, he made the most violent efforts at intervals to break loose, but in vain. I discovered that he was pinched severely by the rope about his head, and on relieving him from the pressure, he soon yielded to the influence of the arcanum. A yoke and bow were placed on his neck and he was put in the shafts of a cart alone and driven a mile out and back, and was perfectly tractable. The two negroes who had hold of him were perfectly astonished. The following day, however, he became sullen, but was gentle to handle, would go a little way and then fall flat on the ground, but was in no way vicious. The third day he exhibited the same sullenness, and after various means had been resorted to, to move him, some straw was placed along side of him, and fire applied to it; as soon as the blaze reached him, he jumped up and went to work honestly. He has fine spirit, can be approached every where, and handled with perfect gentleness—he never laid down after the firing, and never from the first showed any bad symptoms but the one of being sullen.’

*3d Experiment.*—‘The next trial was on a fine four-year-old mule. A partial attempt had been made to break him last summer, but he kicked every thing to pieces, and I determined to wait for the secret. He was exceedingly vicious, and difficult to approach. We finally succeeded in barring him up in a stall, and getting a bridle on, and securing him properly. The operation commenced by very slow degrees and great caution. He twice got over the bars of the stall with two powerful men holding on to him. You will understand that his position was reversed, his rump was against the manger, and two bars were put across the stall, resting against the post, the upper bar as high as the top of his back, and to my astonishment he got over, but did not get loose. It was a long time before the arcanum took effect, and I had absolutely begun to despair. A violent storm of wind and rain came on during the operation, and I was much troubled what to do; but just as the rain abated, he began to yield; we could then handle him any where; the gear was put on him, he was led out and put in the shafts of a light cart, the wind blowing terribly, he moved off finely, was driven out several miles and back; taken out, fed, and after dinner, eight or ten light loads of manure were hauled by him. He is true to the draft, has prodigious spirit, and works well in a cart; he has however, kicked a few times. This mule could probably never have been subdued by the ordinary methods.’

*4th Experiment.*—‘I broke another mule of the same age as the above, this evening, with about one-fourth part as much of the arcanum as was used on the preceding.’

\* This horse balked afterwards with another person. The remedy has not yet been tried on him thoroughly.

It is proper to remark, that the same gentleman tried the remedy on a fine blooded mare last winter, and failed to produce any effect, or if any, very slight. But believing that circumstances prevented a full and fair trial, the report of her case is deferred until another effort is made.

In relation to the experiments above reported it is also proper to explain that the sullenness of the bull might probably have been overcome by the application of the arcanum, though the firing was equally as easily applied. As to the prolonged and tedious operation on the mule, in the third experiment, the cause is perfectly apparent to us, and we were surprised that it did not occur to the very intelligent operator. It was the violent *wind*. We cannot with propriety explain the *modus operandi* of this cause in this place, but it will be perfectly plain when suggested to those in possession of the arcanum. The weather should always be perfectly calm during the operation, or the animal should be placed in a stable perfectly closed against its effects. It was not, we think, the devilishness of the animal, that resisted such persevering treatment, but the unfair chance the treatment itself had of being effectual.

Now let us ask all persons acquainted with horses, to examine the above cases candidly, and to refer to the statements of 'Sigma,' (above referred to, and then say whether there is any delusion in the 'secret for taming wild horses.' Next to the evidence of our own senses, is the testimony of reputable men; but we surely cannot resist both. We know the magnitude of the draught we are making upon human credulity; but are we not armed with a force that at least authorizes the attempt? We know full well that the present received system of philosophy, will reject even all the testimony we have adduced, because 'the why and because' are not developed—because the philosophers cannot trace the effect to the cause, or because an effect is said to be produced by a cause not heretofore recognized! But we will venture to place before them, a still more formidable stumbling block. This singular effect is produced by causes heretofore held by philosophers to be utterly *powerless*! Though they have been known, perhaps, for hundreds of years, and used by millions of people, with the thoughtlessness of thumbing a nosegay, none but the initiated few ever suspected the power of the toys they were playing with. Physicians do not recognize in them any medical effect whatever, (nor are they mentioned in their book,) and yet the writer of this believes them to possess a power over the animal economy, superior to that of any received practice. *How* they operate the writer has not fully made up his mind upon, but he thinks from the few observations he has been able to make, that they effect a complete change in the nervous system, rendering the animal proof against nervous irritation of all kinds.

The most unpleasant circumstance connected with this great remedy is the necessity we are under of keeping it secret. The few persons who possess it, have obtained it under solemn pledges that it should not be published, and paying considerable sums. We have the privilege of communicating it to individuals in our discretion, but not to authorize them to indulge it to others. This circumstance of secrecy gives it the appearance of a speculation, and causes doubts as to its value. As soon, however, as all interested shall have been *indemnified*, we have hopes of getting the privilege of publishing it, and we pledge ourselves to the public that we shall omit no effort to accomplish the object.

*Isabella Grape Vines.* By ALDEN SPOONER.

[FROM THE NEW-YORK CULTIVATOR.]

SIR,—The cultivation of grape vines and making of wine is getting to be so well understood throughout the United States, through the medium of our excellent agricultural periodicals, that what I am about to write, is probably already known to some of your readers; yet the repetition of interesting facts is often of much benefit and the results of experience in these matters can scarcely be too often repeated.

The very numerous attempts to raise grapes from foreign vines in the *open air*, have resulted in disappointment. The late Mr. Parmentier, of Brooklyn, Long-Island, devoted much labor and expense on foreign vines, to very little purpose. Mr. Loubat, also near Brooklyn, planted a large vineyard, and for some years flattered himself with hopes, which resulted in loss or disappointment. In some few instances in Brooklyn and New-York, where the vines were protected by surrounding buildings, the Chasselas and other foreign varieties yielded well, thereby only demonstrating that such fruit *can be* obtained, if cultivators will be at the trouble of erecting proper houses for the purpose.

The Isabella grape vine is supposed to be a native of North-Carolina. It first obtained its well deserved notoriety at Brooklyn in the garden of George Gibbs, Esq. now of St. Augustine, Florida; and derived its new name from his lady, Mrs. Isabella Gibbs, who was instrumental in obtaining it from the south for her garden. The original parent of all the Isabella vines is now to be seen in the garden of Zachariah Lewis, Esq. on Brooklyn Heights. This favorite vine has spread itself throughout the northern states of the Union, in Canada, and has been imported into France, and drawn forth the favorable notice of the French cultivators. Almost every garden and dooryard in Brooklyn and New-York can boast of its prolific vine, always yielding abundance to the careful cultivator.

In the year 1827, I set out, at a small place near Brooklyn, the cuttings for about 300 Isabella vines, and 50 foreign vines from France and Germany. By reason of careless cultivation from bad tenants, they did not come into bearing until 1831, in which year I was able to exhibit five kinds of very fine grapes at the horticultural exhibition in New-York. I also sent large quantities to the market, and made about fifty gallons of wine, merely as an experiment, as I supposed myself to be the first who had attempted to make wine of this grape. This wine was of two kinds, made in October, 1831, and in the April following was put into bottles, and one bottle of each kind sent to about fifty persons in different parts, who were supposed to feel an interest in the matter. One kind was made of pure juice, to which two pounds of sugar to each gallon was added. The other kind was composed of one third water to two thirds juice—three pounds of sugar to each gallon—one gallon of brandy to a cask of nineteen gallons. Some of this wine attained five years, and was pronounced very excellent.

In the year 1832, my little vineyard bore very abundantly, and I made, in October of that year, eight barrels of wine. It was made



in a variety of modes, to test the quality of the grape, and did not all prove good; but far the greater part was very excellent, and improved with age.

I will now proceed to describe my mode of planting and cultivating the vine, and of making wine.

The cuttings intended for propagation are of any well ripened wood of the last year's growth, embracing three or more joints or buds. It is preferred that it should be connected at the lower joint with some small part of the old wood of the previous year. These cuttings are taken off from the parent vine at any time between the first of November and first of March, and immediately buried in the earth, or put under earth in the cellar; or sometimes the ends are put in a box or basket with earth, and set in a greenhouse, and water occasionally sprinkled on them. In the spring, if they are not placed in their permanent locations, they may be carefully set out in the garden, at one foot apart every way, the upper bud being just even with the surface of the earth. If the season is dry, they will require to be watered several times to insure their growth. They will grow a foot or more in length the first season. In the following spring they may be transplanted to their permanent places, around buildings, fences, trees and arbors. I trim the new sprout down to three or four buds, intending that two only shall be allowed to grow, and these to be trained off from the root in different directions, according to the circumstances of your trellis, or supporter. My vineyard was planted in rows, eight feet apart, and vines eight feet in the rows; but after a few years the trellis became so burdened, that I took up and removed one half the vines, and left them sixteen feet apart in the rows. Each vine, therefore had sixteen feet of trellis, being eight feet on each side of the root. The two main branches were tied to the lower rail of the trellis, and the lateral branches tied to the rails above.

My trellis was composed of four lath, open at the top, as I supposed it was necessary that the sun and air should have a good circulation among the vines; but I am now convinced that a top surface as afforded by an arbor, is necessary. The great exuberance of the vine causes the new shoots to run up into the air above the trellis, and the wind will prostrate and break them, unless they have a flat arbor to rest upon. The fruit hangs with great weight on the branches, which are often broken unless they can rest on an arbor, or are well tied to the upright supporters.

As there are four distinct prunings, or trimmings, required in properly cultivating the Isabella vine, I will now describe them; merely remarking, that although the vine will give fruit when some of these trimmings are neglected, yet no cultivator has a right to expect *good fruit* without bestowing the requisite time and attention to these prunings.

*First*, the winter pruning. This is best done in February or March, provided the vines are not frozen; but may be done at any time between October and April. It consists in reducing the old wood according to the extent of your trellis, and the age of the vine, and strength of the root. All unripe wood is cleared off—old wood thinned out, and ripe wood of the last year's growth shortened down to two or three buds, except such runners as shall be selected to cover the trellis. Much depends on judgment in this trimming. It is difficult to describe precise rules. Those who love the grape should

cut boldly, and acquire the knowledge by experience and close observation. Every branch should at this pruning be strongly tied to the trellis.

The *second* pruning, or budding, takes place about the 10th of May. The buds have then thrown out their branches an inch or two, and generally two or three branches at every bud, or joint. These must all be reduced to one shoot, or branch, always leaving the stoutest or best shoot. They are disengaged with a slight touch and a short time would suffice for many vines.

The *third* pruning takes place about the middle of June, and sometimes earlier, and is best performed with a pair of shears or scissors. At this time I cut off what are called *laterals*—a branch growing out of the green wood on the side opposite to the fruit. These laterals may be broken or cut off quite down to the main branch at any time during the season; but it is better to remove them early, before they have acquired size and strength at the expense of the rest of the vine.

The *fourth* and last pruning is called *stopping*, or *shortening*, and is done with a shears or a knife. It should be done about the middle of July, when the fruit has attained about half its growth. I then shorten all the branches having fruit on them, (except those retained for permanent runners,) by cutting them at two or three joints forward of the fruit. This is a heavy and essential pruning, and divests the vine of much green wood and leaves, and is considered important to the development and ripening of the fruit. I would, however, particularly caution the operator against at any time removing the leaves of the vine, except such as are attached to the laterals and shortenings, and come away with them. The leaves are vitally important to the ripening of the fruit, which is always the best in the deepest shade. Such fruit as by accident becomes exposed to the sun, is sure to be very inferior and sour.

About the 8th of June, while the vine is in flower, and throwing its peculiar and delicious perfume all around, its great enemy, the *rose-bug*, makes its appearance, and feeds with voracity on the sweet and delicate blossom. In a few days after their first appearance, thousands are seen, carrying destruction throughout the vineyard. The best remedy I could ever devise, is to go among the vines early in the morning before the sun has warmed them into activity, and they are then easily made to fall into the hand or on the ground, and may be crushed and destroyed. A few mornings spent in this way will clear the vineyard, as they are a short lived enemy.

In the latter part of July the *blight* or *rot* takes place where the Isabella grape vines are cultivated in fields, but it is seldom seen among those cultivated in cities. Great quantities of fruit will become brown and sometimes black, and fall off. It is not easy to account for this destruction, which is seen as much on the high as on the low vines, and no less on fruit exposed to the sun, than on that in the shade. As an experiment, I discharged with a syringe, lime-water, sulphur-water, and soap-suds upon them, and also sifted dry sulphur on the fruit, but without any sensible effect. I feared I should lose all my grapes, but to my surprise, I had a great crop, notwithstanding the rot. I have since supposed it might arise from the exuberance of the vine, which like the peach and apple tree, may perhaps thus disburden itself of a portion of its fruit; but even on this principle it is difficult

to account for its non-appearance in cities, where the quantities of pure fruit are quite astonishing.

I have observed in the cities, that spiders and caterpillars are in some degree destructive to the green fruit. Spiders will get to the centre of the cluster, and cause the fruit to fall in single grapes, but the caterpillar attacks the stem, and the whole green cluster falls to ground.

I have in a few instances trained the vines upon large apple trees, and the grapes were abundant among the apples: but I do not think this mode is to be recommended where other supports can be had. The fruit was inferior.

In the city of Brooklyn and among high buildings, my vines have not failed to produce abundantly every season, during the last fourteen years. This is an interesting fact to all who cultivate the grape. At my vineyard in the country, they have declined very much, which I attribute to the neglect and ignorance of the tenants on the place. Even in the country they are much better around the buildings than in the open fields. There are from three to five clusters on every fruit bearing branch. I have in a few instances seen six. The extremities of the vine generally produce the best fruit, and there is often much difference in the quality of the fruit on the same vine. They may be trained a great distance over large arbors, and on the roofs and around the upper windows of our high houses. New branches will sometimes grow from twenty to thirty feet in one season.

The vine is sometimes propagated by *layers*, which consists in bending down the branch into a channel dug in the earth, and burying it at a proper depth, in a curving line, with the end above the earth. Roots will start plentifully from the part in the earth, and when it is well rooted may be cut from the parent vine and transplanted. If proper care is taken, the cuttings as well as roots may be sent a great distance. I sent a quantity of cuttings, packed in moist sods in a box via New Orleans to Arkansas, and had the satisfaction to learn that they were all alive on their arrival, and had been successfully planted out.

In March 1832, I sold ten thousand cuttings to William Underhill, of Teller's Point, near Sing-Sing, N. Y. I have never visited his vineyard, but understand he is a successful cultivator.

Nothing is lost in a vineyard, as the green trimmings, in summer are good for cattle, and winter trimmings, when not required for propagation make good fuel.

(To be continued.)

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### Onions.

[FROM THE FARMER'S CABINET.]

On reading an article in the cabinet of March 15th, 1837, upon the culture of onions in Wethersfield, I concluded to try the experiment of raising them on Delaware soil.

I dressed an eighth of an acre with four cartloads of well rotted stable manure, being a part of a parsnip lot planted last year for spring feeding of milch cows. After the manure was very evenly

spread over the ground, it was ploughed in ridges, and planted with nine ounces of seed.

I did not pursue the Wethersfield plan of sowing the seed in rows, but put them in hills, supposing it would take less seed, less work, and produce equally as good a crop. The instrument to plant them was made in the following manner: A lath about four feet long, with four holes bored through it with an inch auger ten inches apart, which were filled with pegs which projected through the lath about one and a quarter inches; then a handle of three feet long was put in the centre of the lath to carry it by; this instrument was then laid across the bed, which, by stepping on it with one foot on each side of the handle, four holes were made ten inches asunder; then moving it about a foot, and repeating the operation, the bed was soon filled with holes ten inches one way, and about a foot the other. A few seeds were then dropped in each hole, the beds raked and rolled, which finished the operation of planting.

As soon as the plants began to appear, the beds were raked between the hills with a small rake made of tenpenny nails, which retarded the growth of the weeds, and caused the young onions to advance in size and strength before the time of weeding and dressing them with a hoe had arrived. I regard this little operation of early raking the beds quite an improvement; for part of the ground was not managed in this way, and the process of weeding was much more difficult; besides in extracting the weeds, many of the young onions would fall down, and some of them were pulled up in consequence of the weeds having acquired a growth equal to the onions.

They were dressed several times through the season by pulling the weeds and using the rake and the hoe. The work being done at intervals, and mostly by children, no very accurate account was kept of the labor, but it did not exceed ten days' work for a full hand. They grew very large, many of them measuring thirteen and a half inches in circumference, and many of the hills had three or four clustered together; they are excellent for the table, fine flavored, with none of that rank, strong taste, so common to onions raised from sets. One of the beds was measured, by which the average produce was over 50 bushels on the whole ground, which would exceed four hundred bushels to the acre.

Although the produce equaled Wethersfield in amount, I was somewhat disappointed on finding several bushels of them not of a merchantable kind; they had thick necks, sort of evergreens; they would neither die nor dry, commonly called scullions by gardeners.

I see it stated, I think in the *American Gardener*, that no crop is more difficult to accommodate with suitable soil, than the onion, in consequence of its disposition to behave in the manner I have stated. The ground this experiment was tried upon, is rather a stiff clay, but very much softened with lime and manure, yet I presume it is not exactly the soil they like. I intend next season to select a more sandy location, for I am rather pleased with the partial success of the operation.

The onion does not seem to want as much manure as other root crops, particularly the potato and ruta бага turnip; they require, it is true, considerable more labor, but the value of the crop would, upon an average, be double, and more, if the difficulty I have mentioned could be surmounted.



I suppose that two and a half or three acres of onions could be raised by hiring one additional hand through the summer season; besides, it is sometimes profitable to increase the varieties of labor on a farm, when workmen are employed to perform it. In mowing time and harvest, we frequently have spells of wet, damp weather, and a field of roots not only gives employment to all hands during such intervals, but pays the expense of an additional hand through the summer, by which the severe operation of gathering hay and grain is very much reduced.

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*Silk from Native Mulberries.*

[FROM THE GENESEE FRAMER.]

We give the following extract of a letter from I. Timmerman, Esq. of Fort Wayne, Indiana,—“I have seen no place where the *Morus Multicaulis*, or the white Italian Mulberry, grows so luxuriantly as here. I have about 30,000 trees of 3 and 5 years growth set in hedge form, and intend doing something in the silk business this season: and I wish to ascertain through the Farmer, if worms fed on leaves of the common black or red mulberry will produce good silk, as the banks of our rivers abound with these.”

Worms fed on either the black or red native mulberry will make good silk, though it has been doubted by some whether it was quite equal in quality to that produced from the white, or the *multicaulis*; others have asserted the reverse. Probably the most serious difficulty in feeding worms from native mulberries would arise from gathering the leaves; there need be no apprehensions as to the silk. Some naturalists, we think, consider the *red* mulberry as our only native species, but the *black* which overspreads the whole west, has an undoubted right to the same distinction. The fact, that the red and the black both abound and flourish so luxuriantly in the Mississippi valley, is a conclusive proof of the adaptation of the country to the culture of silk.

To show that silk may be made from the native mulberry, we give the following notices. In 1734, the Gov. of Pennsylvania in a report, speaks of the culture of silk, and says ‘the tree is natural in our soil, and the worm thrives well.’ In 1770, a silk filature was established in Philadelphia. In 1771, 2,300 pounds of silk were reeled there. In 1770, a lady of Lancaster made a piece of Mantua silk of 60 yards from her own cocoons; and the Queen of England appeared in a court dress of this American silk. The earlier of these periods was before the introduction of the foreign mulberry; if the whole may be considered so.

The following extract of a letter from the celebrated Du Ponceau of Philadelphia, to a member of the Pennsylvania Legislature, will speak for itself. “Dear Sir, I have received the sample of silk you had the goodness to send me, manufactured by a lady in the family of Mr. Oliver, Mercer Co. It confirms me in the opinion I have for several months entertained, that worms, fed on the *red* American mulberry will produce as fine silk as those fed on the white. I can see no difference in the appearance of the silks.”

An article in the North Carolina Spectator of 1836, says—“We have been presented with a quantity of silk both prepared in thread,

and in a raw state, made near Franklin, Macon Co. It is of a fine and beautiful appearance, and was produced from worms reared by a young lady only thirteen years of age. The specimen sent us, was from silkworms fed on leaves of the common indigenous *black mulberry*."

The editor of the American Farmer has been presented with half a dozen skeins of silk, made in Rockbridge, Virginia. The Editor says—"We have called the silk excellent, by which we mean that it was perfectly evenly reeled, properly twisted, and not inferior in any quality, colors excepted, to any silk we ever saw." The worms were fed on the native mulberries of the adjacent forests, red and black.

Such proofs might be multiplied, but these are sufficient to show that both the red and black mulberries of our country, will make first rate silk; and we shall be pleased to hear of the success of our western friends in this, to our country, most important business; of its profits to the individual there can be not a question.

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*Method of Raising Wheat several years in succession on the same land.*

[FROM THE YANKEE FARMER.]

Mr. Edmund C. Millett, of Minot, observes that he purchased a farm a few years since, that had been running down for 20 years, and as he could not at once obtain manure enough to improve the whole of the farm, and as he wished to raise wheat on more land than he could prepare in the usual manner, he followed the method of improving his land by clover. Two years ago last spring he commenced sowing about 8 lbs. of clover seed to the acre with his wheat, and as soon as the wheat was harvested, he ploughed in the clover and stubble, and last spring he ploughed the ground again and sowed wheat and clover as before, without any manure. When he harvested the wheat he kept what grew on four rods less than half an acre by itself, as it was the Black-sea wheat, a different kind from the rest of his crop; the produce was 18½ bushels. The other kind of wheat on the same ground was a good crop, but being harvested with several acres grown on land differently prepared, the produce was not ascertained. Mr. M. says that he shall manage a part of his land in the same manner for years, and see what the result will be: he thinks it will be favorable. He intends to get a cultivator and work his ground with that in the spring, as it will be cheaper than ploughing, and he can loosen the surface without disturbing, so much, the stubble and clover when it is well ploughed under.

Plaster sown with clover would increase the crop on most soils, and on that account benefit the succeeding crop of wheat, but whether a very rank growth of clover would injure the crop of wheat with which it grows, or not, we cannot say; it is a good subject for experiment. We select the following remarks:

Experience has demonstrated that when the sulphate of lime, or plaster of paris is applied to soils, that it increases the growth of clover, and that when clover grown upon the soil is mixed, either by ploughing in the whole crop or by turning under clover stubble that,

it prepares such soils for producing wheat in greater perfection than when manure is applied from the yard.

It has been by pursuing this course of tillage, or rotation of crops, that many lands in western New-York, which by nature were thin, light soils, and which did not when first cultivated, produce more than fifteen bushels of wheat per acre, have been made to produce from thirty to forty bushels—How long the fertility of lands thus managed will continue to increase is unknown, but thus far our fields which have been cultivated the greatest length of time, where attention has been paid to rotation, produce not only the greatest quantity but the best quality of wheat.

Where fields are clear from stumps and stones so that they can be ploughed deep and regular, and where proper attention has been paid to seeding with timothy and clover, many prefer turning clover either in crop or stubble under and allowing it to remain working the soil lightly with drag and rollers. In this way it is thought the greatest advantage by the preparatory crop is realized.

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### *On Improvement of Wet Meadows.*

[From Transactions of the Essex Agricultural Society.]

The Committee on Improving Wet Meadow and Swamp Lands, consisting of N. W. Hazen, Asa T. Newhall, and Amos Sheldon,

Have received upon the subject referred to them, the two communications which are annexed. These sufficiently attest the facility with which such improvements may be made, and the rich benefits which those may expect who undertake to prosecute them judiciously. The committee understood Mr. Dalrymple to state that the average cost of his meadow land, which is that spoken of in his statement, including the price which he paid for it, and all expenses of cultivation for the first crop, would not exceed \$25 00 per acre, and it appears, from the interesting narrative which he has furnished, that he obtained for the produce of a single acre in one year, the sum of \$100.50.

It is striking to reflect how many thousands have emigrated to the wilds of the West, leaving behind them New England, with all its social advantages, and thousands of *prairies* just like this discovered by Mr. Dalrymple, in the very centre nearly of the populous town of Lynn,—in pursuit of lands that will afford a profitable cultivation: quitting the homes and graves of their fathers with an indifference, which would sometimes seem to indicate that the cold calculations of interest had impaired the force of some of the better feelings of our natures, in pursuit of a cheaper and more fertile soil, which the same enterprise, better directed, would have taught them to find in the "Wet Meadows and Swamp Lands" of their own native farms. Add to the productiveness of Mr. Dalrymple's meadow the value which the high privileges of New England confer upon all the land situate within her borders, and he may safely challenge Illinois, and even the banks of the Red River, for an instance of cultivation equally profitable.

The example afforded by the experiment of Mr. French, is scarcely less valuable to be presented to the farming interest, than that of Mr. Dalrymple. It is upon a smaller scale, and such as a majority of

the farms in the county probably afford an opportunity for cultivation. And Mr. French further informs us, the necessary labor was done at intervals afforded by the other business of the farm.

It would not be easy, by any commentary, to add to the impressions which the statements of Messrs Dalrymple and French cannot fail to make. Committee submit them without further remark.\* They award the highest premium of twenty dollars to Orin Dalrymple, and the next of ten dollars to Moses French.

N. W. HAZEN, For the Committee.

December, 1837.

[\* They are omitted in this publication.]

### *Destruction of the Curculio.*

[FROM THE NEW-ENGLAND FARMER.]

*Messrs Editors:* For the following successful mode of destroying the Curculio, I am indebted to my respected friend Dr. Joel Burnett, of Southboro', a gentleman eminently distinguished for science and practical observation. I hope others may be induced to try the experiment and with the like successful results.

In insulated situations, as in cities and in places surrounded by salt marshes, the plum and other smooth skinned fruits usually bear large and very abundant crops. But it is not thus in the open country, where it is well known, that a great proportion of the fruits of the Plum, and the Nectarine and the Apricot are extremely liable to be destroyed by the attacks of the Curculio; and from this cause prematurely fall to the ground.

The Curculio is extremely partial to the smooth skinned fruits. The cherry though equally obnoxious to the attacks of this insect, usually in a great measure escapes, owing to no other cause than the incredible number of its fruits.

It is well known that the egg which the curculio deposits in the fruit becomes in process of time a worm, which causes a great part of the fruits to fall. Soon after its fall, the worm quits the fruit, descending into the earth. Early in spring, and about the time the fruit is forming, the Curculio arises from its early bed, a winged insect. Yet though having wings, it has been observed that they rarely use them. After entering their new element and remaining on the surface of the earth for a time, they ascend the tree, and in a few days they puncture and deposite an egg, in many cases, in every fruit.

The motions of the Curculio are very quick; to observe them requires very narrow and close inspection, as they avoid the face of man suddenly dodging to the opposite side of the leaf or limb.

Dr. Burnett informed me a few days since, that he had a fine tree of the Princes Imperial Gage Plum. This variety, although naturally one of the most valuable and productive of all Plums, yet never would produce a crop of fruit on his grounds, on account of the abundance of the Curculio's, but by adopting the following expedient, a most bountiful crop was produced during the last season.

Early in the spring, or as soon as the tree was in bloom, a hencoop containing a hen and an early brood of chickens, was placed beneath the tree. After the Curculios had arisen from the earth, and before



they were prepared to ascend the tree, every one of them, as it appears, were devoured by the brood; and owing to this circumstance and to no other cause, the tree ripened and matured a most extraordinary crop of fruit.

WILLIAM KENRICK.

*Nonantum Hill, Newton, April 10, 1838.*

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### *Rotation of Crops.*

[FROM THE YANKEE FARMER.]

The following principles are laid down by Chaptal for a rotation of crops:

I. All plants exhaust the soil. They are partially supported by the earth, the juices from which constitute an important part of their nourishment.

II. All plants do not exhaust the soil equally. Air and water help to nourish them; different kinds of plants require the same nourishment in different degrees.

III. Plants of different kinds do not exhaust the soil in the same manner. Plants with spindled or tap roots, draw nourishment from layers of soil in contact with the lower part of the root; while those whose roots are spread near the surface, exhaust only that part of the soil.

IV. All plants do not restore to the soil either the same quantity or the same quality of manure: The grains exhaust a soil of the most, and repair the injury the least. While some leguminous plants restore to the soil a great portion of the juices they receive from it.

V. All plants do not foul the soil equally.—Plants are said to foul the soil when they promote or permit the growth of weeds. Plants which have not large leaves fitted to cover the ground, foul the soil.

From the above principles the following conclusions have been drawn.

1. That however well prepared a soil may be, it cannot nourish a long succession of crops without becoming exhausted.

2. Each harvest impoverishes the soil to a certain extent, depending upon the degree of nourishment which it restores to the earth. The cultivation of spindle or tap roots, ought to succeed that of running and superficial roots.

4. It is necessary to avoid returning too soon, to the cultivation of the same, or analogous kinds of vegetables, in the same soil.

5. It is unwise to allow two kinds of plants, which admit of the ready growth of weeds among them, to be raised in succession.

6. Those plants that derive their principal support from the soil should not be sown excepting when the soil is sufficiently provided with manure.

When the soil exhibits symptoms of exhaustion, from successive harvests, the cultivation of those plants which restore most to the soil, should be resorted to.

*Raising Chickens.*

[FROM THE YANKEE FARMER.]

The subject upon which I am about to write, may excite a smile upon the face of some, but if I succeed even in rendering a small service to any, the object will be accomplished. And I think may throw out a few hints that may be useful in increasing the number and quality of a fowl that is so universally made to conduce to the luxury of the table and the proper sustenance of the human system.

In the first place then, I would advise those interested, to procure for themselves a good breed of fowls. The pair I sent you last fall, I consider nearer to perfection, in all respects, than those of any other breed. I call them the ostrich breed, from their strong resemblance when about half grown, to that famous bird.—They are large—their habits are very domestic—they lay well—set well—hatch well—and nurse well—and their flesh is very delicious.—Have a well sheltered place for them to roost in, with a sufficient number of places for them to lay their eggs. Let your box be about a foot wide and about fifteen inches high—with partitions about ten inches apart. The box to be enclosed on every side, with the exception of about six inches of the front and at the upper part—place the box enough against the wall to prevent the depredations of children &c. The hen is fond of a small aperture to creep into for the purpose of laying. At the proper setting season remove your eggs carefully every night into a safe place to prevent their freezing or getting much chilled, which will prevent their hatching. No “nest egg” is necessary upon this.—The nest egg, in my opinion, seldom produces a chicken early in the spring, because of its generally having been chilled.

While the laying business is very brisk, prepare as many sitting boxes as you think fit. Let them be about eighteen inches square, enclosed on every side, with a loose cover for the top, not so tight as to shut out the air; put hay or straw enough to form a nest, in which you may place about thirteen eggs—put the hen in the box and lay on the cover, with a weight sufficient to prevent her from knocking it off.—You may confine her without any injury for three or four days, at the expiration of which time you may take off the cover, and leave her until she hatches—which almost every body knows, will be exactly twenty-one days from the commencement. The advantages of a large box is these: It gives room to move round without breaking the eggs, and the little ones a chance of coming out without the danger of their running away. When hens set on the ground or in unprotected places, they are subject to be interrupted by animals, and when two or three chicks are strong enough to run they leave the nest, and the mother, following them, leaves the half-hatched to perish. This is a great loss of time, eggs and chickens.

As the warm season advances, always endeavor to set three hens exactly at the same time—they will consequently hatch at the same time, and you can then divide the chickens of the three between two, and they can generally take care of more than they can well hatch, if properly managed.

Make as many moveable coops as you think necessary, with a shed roof and slats in front, which place in some safe place from hogs, in

the sun—the sun is very invigorating to young chickens. The hen and chickens should be fed with corn meal, wet with water and milk, three times a day, and watered at least once. The hen should be kept confined in this way at least for a week, to prevent her from leading them into the wet grass in the morning, which is very prejudicial to their well being. At the expiration of that time, if the weather is good, you may place a block under one corner of the coop and let them out; at night they will return and take possession again, when you should take away the block, and keep them in until the dew is off the grass. If the weather is unpleasant keep them in all day.

When the chickens acquire more size and strength, they should be fed in what is called a “chicken feeder,” which is a covered enclosure 6 or 8 feet square, with slats just close enough together to admit the chickens and exclude the older fowls.

Each of my hens last year raised to perfection, on an average at least twenty chickens.—They each raised two broods and several hatched three times.

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### On the Mixing of Vegetables.

[FROM THE YANKEE FARMER.]

Almost every cultivator is aware that some vegetables will mix, and takes the precaution to plant the different kinds at a distance from each other in order to preserve them pure. But there are but few who consider how far vegetables will mix, and while they are very cautious in keeping some varieties at a distance, others are crowded together, mixed and spoiled.

Almost every farmer knows from facts under his own observation, that different kinds of corn will mix, when planted near each other, and yet many have expressed their surprise that any other vegetables would do the same.—This is owing to the corn being of different colors and showing distinctly the effects of the mixture, while other vegetables become mixed, and some valuable kinds spoiled, without the cause of the depreciation being known, because the effects of the mixture are not apparent by looking at the seeds.

Every one should consider how far vegetables will mix, and when and how they mix; this will enable cultivators to preserve valuable kinds pure. It will also enable those who can give proper care and attention to experiments, to produce new, and perhaps valuable varieties, by a cross or mixture of two different kinds.

Plants have in their flowers different organs which perform an important service in relation to the seeds. One set of organs are called *pistils* the other *stamens*. These organs are usually within the *corolla* or leaves which constitute the flower. The *pistils* are frequently situated in the centre of the flower; they are little tubes open at the top for the reception of a fine dust, which is received from the top of the *stamens* and conveyed to the seed. The *stamens* are thread-like organs and frequently surround the *pistils*; on the top of the *stamens* are little knobs, called *anthers*, like a little box, which opens when the flower is in full bloom, and throws out a colored dust, called *pollen*. This is received on the *stigma*, or top of the *pistil*, and conveyed through the *pistil* to the seed. Without this *pollen*, or fertilizing dust, no good seed would be produced.

The different organs are generally in the same flower, as in the lily and tulip. which have one *pistil* in the centre, and six *stamens* around it. The lilac, catalpa, sage, flag, saffron, red top, herds grass oats, wheat, rye, barley, potatoe. maple, laurel, myrtle, peach, pear, apple, beet, carrot, violet, morning glory, and almost all other flowers have the *stamens* and *pistils* in the same flower.

There are some plants that have the *stamens* in one flower, and the *pistils* in another, such as the Indian corn, melon, cucumber, squash, pumpkin, &c. The flower that is on the little mellow. cucumber, &c. contains a *pistil* which open at top to receive the *pollen* or dust.—The blossom where there is no fruit contains a *stamen*, the top of which is covered with dust, which is blown by winds, or carried by bees and other insects into the *stigma* or top of the *pistil*. After a bee has been on the *anther*, or top of the *stamen* of pumpkin and other vines, he is covered with dust, and if he then flies to and enters the *stigma* of the squash vine he will leave a part of the dust and produce a mixture. Some of the seeds from that squash would be likely to produce squashes—others would produce pumpkins.

Different kinds of cucumbers, melons, squashes, &c. are not only liable to mixture when planted near each other, but pumpkins, squashes, cucumbers, water mellons, and musk mellons will mix with each other when planted near, they bring only different varieties of the same species. On corn the *stamens* and *pistils*, and in different flowers. The silk is the *pistils*, and the *stamens* are on the spindle; when it is in full flower, by shaking the spindle the dust falls in abundance upon the silk. If the silk should be covered so that no dust could come upon it, there would be no corn; this accounts for the cobs being partly without corn, where only one or two plants are by themselves, as there is then so small a quantity of dust that it does not fall upon every part of the silk. Sometimes a heavy wind may blow away the most of the dust, when there are only a few plants together; but in a large piece of corn, the dust blown from one plant will be likely to fall upon the silk of others, so that every part of the skill will receive some dust upon it. When the corn is agitated by wind, the dust may be seen falling like a shower.—Two varieties of corn will some times mix when planted at a considerable distance from each other, as the *pollen* or dust is very light and may be carried a great way by the wind.

Some plants and trees have the *stamens* on one plant and the *pistils* on another, so that it is necessary to have plants of different kinds near each other in order to have seed or fruit. Asparagus is of this class; so is the shepardia or buffalo berry. In order for different varieties of vegetables to mix, they must be in flower at the same time. We have very early white corn by the side of late yellow corn, both planted at the same time, and all the earliest white corn was pure, but the latest ears were mixed with the yellow.

Many cultivators suppose that when two kinds of corn of different colors are mixed, there is no mixture excepting in the kernals that show a different color; but this is a mistake. Five years ago we planted some blue snapping corn a number of rods from Knight's tall flour corn, and it became considerably mixed. Some ears of the blue corne were all blue, others were about half blue, the rest partly white, some yellow, and some of the kernals were partly light and partly blue. We selected some of the ears that were all blue, being in appearance precisely like that we first planted, it, and a part of the pro-



duct was blue, light, yellow, &c. as above named. We again selected the blue ears and planted again, and a part of the product was light, though not so much so as the crops of the two previous years.

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### *Sheep Grazing among Growing Corn.*

[FROM THE FARMERS' REGISTER.]

*Baltimore, June 20, 1838.*

A few days since, I took a ride into the country with a friend, and, on passing a farm about twelve miles from the city, we observed a flock of sheep quietly feeding in a corn-field. The corn was about a foot high. Supposing we should be doing the owner a service, we took speedy occasion of informing him of it. He laughed, and said they would not hurt the corn; that the sheep were purposely kept in the field for the purpose of keeping down the blue grass, &c. On further conversation, he informed us that sheep will never touch the green or growing corn plant; that they must be very hungry if they do, &c. Having seen the sheep in his corn, and observed his undisturbed manner on being informed of the fact, I could not, of course, doubt the correctness of his theory; but I had never before known the fact, and thought there must be many others equally ignorant. If sheep will not only not injure the corn, but contribute to its culture by destroying the grass, and especially blue grass, I suppose it would be a great object with all corn-planters to have large flocks of them. I have mentioned the circumstance to several persons, who promise to try their sheep in their corn-fields. Pray, sir, is this old or new to you? If the former, say nothing about it; if the latter, let your readers have it.

GIDEON B. SMITH.

[It is said that Ward, of Waccamaw, and those of that neighborhood, keep their sheep on their rice field banks to great profit—the sheep grazing only on the rich grasses, and not molesting the rice.—Ed.]

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### *Raising Pork—Use of Salt.*

[FROM THE MAINE FARMER.]

MR. HOLMES—I herewith forward to you a statement of the method I have pursued in tending and fattening a last spring pig, which you are at liberty to publish in the Farmer, if you think its publicity will be of any service to your patrons; if not, throw it under the table.

I purchased a pig sometime in May last, (of Horace Wilder, of this town,) then four weeks old,—put him into his pen, and from that time till into September, he had nothing for food except skim-milk and butter-milk. In September, I commenced boiling potatoes for him in a large kettle, which were fed out to him cold. I found he did not relish them well, and appeared to thrive but very slowly. In October I procured some oats—had them ground—and afterwards added a good portion of the meal with the potatoes, when first taken off the fire and mashed up. This was also given him in a cold state. I could not perceive that he gained in flesh so fast as I wished him to; and besides, he had a constant looseness about him, which I knew of no way to prevent.

About the first of November, I discontinued the use of cold food, and substituted an entire hot mess for him. Three times a day I boiled a kettle of potatoes—mashed them up in the swill-pail, with the water they were boiled in, and put therein a handful of salt—mixing the whole with the oat meal as before; and gave his food to him as soon as it was prepared. He burnt his nose two or three times, but he soon learned how to humor his appetite. After this change of his diet, his looseness left him, and he began to increase in appetite and growth, which continued till I butchered him, which was Jan. 2d, (week before last,) when he weighed 238½ lbs.

I am sensible that there have been many last spring pigs butchered in the state that have much exceeded mine in weight. But I believe that by giving mine *salt*, with every portion of food he was served with in a *hot state*, added to his value twenty-five per cent. Other people may think differently—but such is the opinion of your humble servant,

EBEN. JENNISON.

N. B. The whole of the oat meal given was but five bushels.  
*North Dixmont, Jan. 10, 1838.*

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### *To Destroy Vermin in Cattle.*

[FROM THE FARMER AND GARDENER.]

The following is an extract of a letter from our friend, *Edward Garrigues*, of Darby, Pennsylvania:

"Observing some observations relating to destroying vermin on cattle, I am also induced to remark, that a cow, much injured thereby was cured immediately by rubbing down the spine, from head to tail, with *Coe Indicus*, or rather a decoction thereof, which produced an entire new coat of hair, and changed the appearance of the beast so much for the better, that the former owner would not have known her only by the mark of white on her hide."

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### *Analysis of the Santee Marl.*

[FROM THE FARMER'S REGISTER.]

In the latter part of this volume, (page 270,) there was published a letter from F. H. Elmore, Esq. describing the marl found in South-Carolina on the banks of the Santee, and which accompanied a specimen of the marl in a question. We then, upon very slight examination, merely reported that the marl was very rich; and promised a careful analysis, and a report of the results, at a time of more leisure. We are now enabled to state, from recent examination, that the specimen sent was almost a pure carbonate of lime, as it contained more than 98 per cent. The small residue is of very fine clay and vegetable matter, with a minute proportion of silicious sand. The lump was almost as white, and very similar in other respects, (as it was entirely in chemical composition,) to English chalk; the only certain difference being that the American earth is not fit to mark with, like the English. No true chalk has yet been discovered in this country. From the unexampled richness of this specimen, if considered as *marl*

we strongly suspect that there was sent to Mr. Elmore a specimen of the richest parts, and not one selected fairly to show an average quality. We therefore without further light on the subject, would place more confidence on the analysis reported by our correspondent J. D., on page 173 of last number, as showing a usual or average strength. That marl was from the same part of the country, and doubtless was part of the same deposit, and contained 88 per cent. of carbonate of lime; which is rich enough to induce even the most lethargic of the South Carolinian land-holders to commence its use. We rejoice to learn, from the statement of J. D., that the reproach which, in this respect, has lain on the otherwise energetic and enthusiastic people of South Carolina—and which we have not been backward in urging against them—is now in course of being removed. For, sure we are, that if marling is once tried there, and the effects seen, it is impossible but its use will be rapidly extended. Absence from home prevented our seeing the letter of J. D. until it had been printed; or these remarks would have been made at the time of its publication.

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### Scratches.

[FROM THE FARMER AND GARDENER.]

The scratches is a disease which soon places a horse in such a situation as to render him unfit for any kind of service. When it is permitted to run upon a horse for any length of time without any remedy being applied, the ankles and legs swell very much and lameness is produced in so great a degree, that he is scarcely able to move.

Scratches are produced from many different causes: hard riding, dirty stables, legs left wet at night without rubbing, standing in his manure, or mud, where he is confined in the stall, &c. Although much inflammation may appear, and the disease discover much inveteracy, the cure is not difficult.

*Remedies.*—No. 1. Remove the horse to a clean stall; with strong soap-suds wash his legs and ankels nicely; clean out his feet; then wash every part inflamed or sore in strong copperas water, twice a day until the cure is performed: take half a gallon of blood from the neck vein, and give a mash twice a week, of one gallon bran, one teaspoonful saltpetre, one tablespoonful powdered brimstone. Great attention should be paid to the cleanliness of the stable.

No. 2. After the horse is placed in a clean stall and his legs and ankles washed with soap-suds, take of blue stone one ounce, alum four ounces, to which add half a gallon strong decoction of red oak bark, stir them together until the alum and bluestone are dissolved; then wash the cracks, sores, and inflamed parts, twice a day, and the cure will be effected in a very short time. Light or green food would be preferable to any other, for a horse thus diseased, until a cure is performed.

No. 3. After washing the legs and ankles with soap-suds, take one tablespoonful powdered brimstone, one tablespoonful lard, mix well together and anoint the sores and parts inflamed twice a day. A horse will get well much sooner confined in a stall, than by running at large.

No. 4. Boil poke root to a strong decoction, and bathe the ankles twice a day. In all cases a clean stable will aid you much in making a quick cure of the scratches.

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### *Strains.*

[FROM THE FARMER AND GARDENER.]

Strains, in whatever part of a horse, produced from running, slips, blows or hard riding, are the relaxing, overstretching, or breaking the muscles, or tendinous fibres.—A strain, unless uncommon, may be cured in a short time, by applying the following remedies:

No. 1. Take of sharp vinegar one pint; spirits of any kind, half a pint; camphor one ounce; mix them well together, and bath the part injured twice a day; a piece of flannel wet with the mixture, and wrapped around the part, will be very beneficial; and from the neck vein take half a gallon of blood.

No. 2. Take of opedeldoc a piece the size of a marble, and rub it on the strained part with the naked hand, until the hand becomes dry, twice a day; should the injured part resist both these remedies, you may conclude the injury is a very serious one, which nothing but time can relieve, and the horse must be turned out upon grass a sufficient length of time for nature herself to perform the operation.

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### *Mange.*

[FROM THE FARMER AND GARDENER.]

The mange in horses is a disease of the skin, which is generally rough, thick, and full of wrinkles, especially about the mane, tail, thighs, and the little hair that remains on these parts stands up very much like bristles.

The ears and eye-brows are sometimes attacked, and in a short time are left quite naked. The mange is an infectious disease: indeed so much so, that if a horse is carried into a stable where one that is mangy has been in the habit of standing, he will be almost certain to take the infection, unless the litter has been removed and the stable properly cleansed and aired. Proper attention will make the cure easy.

*Remedy.*—Take of powdered brimstone and hog's lard an equal quantity; mix them well together and anoint the part affected twice a day, bleed plentifully and give two or three mashes (composed of bran, sulphur, saltpetre, and sassafras) within a week, by which time a cure will be performed.

A clean stable and nice bed of straw will aid much in accomplishing the object in view.



## PART III.

### MISCELLANEOUS INTELLIGENCE.

*Remedy to save the shoulders of Horses from being chafed by the Collar.*—This simple and effectual contrivance is made of two pieces of leather, which, for an ordinary horse, may be made 5½ inches wide at top, 6 at the greatest protuberance, the front edge straight, posterior curved with a gradual swell adapted to the shape of the collar behind. These pieces must be sewed together at bottom, and connected at top by two small straps and buckles, so as to be let out or taken up at will. The lower part must be so shaped as to fit the throat of the horse. A strap passes from the bottom of the sweater between the legs to the girth, by means of which it is kept in place. The strap should not be too tight, lest it might incline a baulking horse to stop, when ascending a hill; and the buckle at the end near the girth, if it chafe, may be covered. The leather should be tolerably stout upper, rendered pliant by the occasional application of tallow to the outside. The inner side should be kept clean and smooth. The sweater is in fact a sheath for the shoulders, and the collar rests on it, instead of the skin of the animal. H.

[*Farmer's Reg.*]

*A Useful Discovery.*—It is said that the difficulty always experienced in removing horses from a building on fire, may be overcome by throwing over their backs the saddle or harness to which they are accustomed to, when they will be led out with the usual docility. If this be true, it should be known very generally, as many valuable horses are lost every year by being consumed in burning stables.

*Minerals in Jamaica.*—The expectations of the Spaniards, which appear to have been disappointed on the first discovery of Jamaica by Columbus, with respect to its mineral riches, appear to be on the eve of being realized, in our days, after an interval of more than three centuries; specimens of copper, gold, silver, lead, and iron ores, of great beauty and richness, having been received in this country from an estate in the vicinity of Kingston. The copper ore is said to yield fifty per cent. of pure metal, and hence appears to be the richest in the world: and a cargo of copper ore shipped from an estate in the parish St. George, sold as high as £40 per ton. Besides, this, a discovery of coal, of excellent quality, has also taken place, and promises to be of vast advantage to the inhabitants.

[*Mining Journal.*]

*Effectual method for destroying Caterpillars.*—An intelligent gardener has communicated to us a plan for destroying caterpillars, which we are sure will be very acceptable to many of our readers at the present moment, when this destructive animal is committing such ravages among the currant and gooseberry bushes in all quarters. His plan is to smoke them. This is effected by placing on some live coal or peat in a flower pot, or other convenient vessel, a small portion of tobacco, and placing it under the bush to be smoked. An old table-cloth or carpet is then thrown over the bush, and bellows used for blowing the peat. In this way, the tobacco smoke, which moves upwards, is confined to the bush, and the caterpillars, in the course of four or five minutes, fall to the ground, apparently lifeless. As they soon recover, however, it is necessary to collect them together with a hoe, and to destroy them. Our informant states, that he has frequently tried this plan, and always with success. He recommends the plan being adopted in the earlier stages of the caterpillar, as thereby not only is the injury they would otherwise commit prevented, but the effect of the tobacco smoke is found to act more speedily.—*Ayr Observer.*

**Ruta Baga for Horses.**—The writer has tried a successful experiment of feeding a horse on ruta bagas, in addition to the usual feeding of hay and oats. At first he could only be induced to eat them after he had gone for some hours without food, but he now has a strong appetite for them, and will eat them freely without cutting, gnawing them down with his teeth. Half a dozen good sized ones in a day, with two quarts of oats, keep him in excellent condition, except when he is worked unusually, when a greater supply of oats is necessary.—*Gen. Far.*

**To restore tainted Meat.**—If your meat be tainted, take it out of the pickle, wash it so as to cleanse it of the offensive pickle, then wash your barrel well either with a solution of lime or ashes; after which repack it, and between every layer of meat put a layer of charcoal, until your barrel be full; then make a fresh pickle, strong enough to bear an egg or potatoe, and fill up your barrel. As you repack your pieces, it would be well to rub each with salt. Let it remain a week or ten days, and the *taint* will have disappeared, and the meat be restored to its original sweetness.

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Communicated for the Southern Agriculturist.

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### Monthly Calendar of Horticulture, &c.

FOR AUGUST.

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**Turnips.**—In this month you may sow your several parcels of turnips, and should they not be destroyed by the hot sun and frequent rains, they will be very good; but as they are liable to this calamity, sowings had better be made every week or fortnight. The ground should be made very rich, entirely cleared of all weeds, and raked smooth. Draw your drills 9 inches or a foot apart, and scatter your seeds thinly therein; cover them *lightly* with the rake, or what we have found even better, with a branch of a tree, which will generally cover them sufficiently deep, without placing too much over them. Choose a moist spell of weather, and as the sun will be very hot about this time, it will be proper to cover the rows over for several days after the young plants have come up. As soon as they have leaves the size of a half dollar, they ought to be thinned out from 3 to 9 inches apart, according to the variety sown: If intended to be used for soups, they may be left thicker, and be thinned out as the young turnips are required. Any of the varieties may be now sown. We recommend the Early Dutch, Yellow Scotch, Maltese Red tops, and Norfolk.

**Ruta Baga.**—We have not included this variety of turnip among the above, as the culture and management differs somewhat. You may either sow them at once where they are to remain, or sow them like cabbage seed, on a seed bed, and transplant them out at the proper season. We prefer the latter. In either case, the preparation of the ground is the same. The best mode of cultivating the Ruta Baga with which I am acquainted, is on ridges; for this purpose, let your ground be well broke up with the plough, if the quantity to be sown is large, or with the spade, if in a small garden. This being accomplished, make deep trenches from 18 to 24 inches apart, (the latter distance to be preferred, if large roots are desired.) Into these trenches, have a good quantity of half rotted manure spread. Have the earth reversed over the manure, so as to form a ridge, the centre of which is to be immediately over the manure. Dress these ridges with

a hoe, and smooth the tops—on these draw a small drill, and sow the seeds therein, covering them very lightly; or if you have but few seeds, drop 5 or 6 seeds every 6 inches, and cover them as above. If you have a large quantity of ground to sow, you must endeavor to do it in a wet season, but if only a small quantity, it may be done at any time, and the seeds protected from the sun. The seasons are not always propitious, and we do not always have rain when we wish it. It is in such seasons that the sowing on a seed bed, and transplanting out the plants at a fit time, is highly advantageous. You sow the seeds just as you would cabbage seed, on a piece of ground made rich and fine, and as the sun is very hot, a scaffolding should be made about three feet above them, on which branches of trees, straw, or any thing else, may be laid, so as to shade them: They of course ought to be frequently watered, if the weather is dry. When they are large enough, have your ground prepared as directed above, and transplant your plants thereon, leaving them about 8 inches or a foot apart. If the weather is very dry, you can give to each a little water after they are planted. Or the better plan, which is open holes, and pour in the water before you insert the plants; this brings the moist earth in immediate contact with their roots. A pine top (branch) placed to the South, will protect the plant from the heat of the sun, and will last as long as there is any occasion for it. Branches of other trees soon wilt and drop their leaves.

*Cauliflowers and Brocoli.*—This is considered one of the best months for setting out Cauliflowers and Brocoli plants, where they are to remain. Make the ground very rich, and bear it in mind that you cannot manure too high for these vegetables; in fact, unless you manure very high, it is labor lost to meddle at all with them. They are managed exactly like cabbages, except that they require more room, say 4 feet, from row to row, and 3 feet in the row. Seeds of Cauliflowers and Brocoli may also be now sown. They will not flower before Spring.

*Cabbages.*—Any of the varieties of the Cabbage may now be set out. We prefer the Sugar-loaf, Savoy and Battersea. But the Drumhead, Oxheart, Green glazed, &c., may also be planted out. These will head in the fall, and be good all the winter. You should also sow more seeds—the first named varieties are to be preferred for the table, the latter for feeding cattle.

*Carrots, Salsafy, Beets, Parsnips.*—If the season prove moist, this is one of the best months for sowing seeds of these vegetables. They will require to be protected from the sun and heavy rains. All of these will be fit for the table by December, (several of them earlier) and be fit for use until late in the spring, when they will run to seed. The Beets are liable to be attacked by worms, which destroy the leaves. This may be prevented by watering them with a decoction of Pride of India, made by steeping the leaves and young twigs of that tree for several days in water. This remedy is equally applicable to the Spinage and Lettuce, which are liable to the same calamity.

*Spinage.*—Sow your first crop of Spinage now. They are likely to be destroyed by worms eating their leaves, but by watering them with a decoction of Pride of India, you may preserve them. There are several varieties; we prefer the Flanders Spinage. The ground should be very rich, and when the plants have attained a size large enough for use, they may be thinned out, and afterwards the outer leaves only broken or cut off, as needed.

*Lettuce.*—This is the proper time to sow your first crop of Lettuce. There are many varieties, and not any very great choice between them. We prefer the Early Cabbage and the Imperial Cabbage. The Tennisball, Admiral, and several others, are worthy of a place in the garden. The Cos varieties are not favorites

with us, though much esteemed in France. They require to have their leaves tied together with a band, to bleach them, which is troublesome, and they are not better, if as good, as the Cabbage varieties.

*Onions.*—It is seldom that any attention is paid to the raising of onions for the fall and winter in the neighborhood of Charleston, an abundant supply being obtained from the Eastern States; but in the interior, provision has to be made for the winter, as those planted out in the spring, after maturing, cannot keep through the summer. Seeds therefore should be sown in the spring of the year, and be transplanted out in this month, in beds made very rich—the rows should be about 9 inches apart, and the plants from 4 to 6 inches in the row. Seeds should now be sown, which will do to set out in November and December, for the spring crop.

*Spanish Radishes.*—These grow to a large size, and keep during the whole winter; they should be sown and treated like beets.

*Snap Beans.*—You may continue to plant snap beans; the crop will not be so productive as in the spring, but still enough will be got to repay the labor.

*Peas.*—If much desired, a few Early Peas may be sown in this month. It is seldom that they succeed, but in some years they produce finely in the fall.

*Celery and Endive.*—May still be transplanted out, but this ought to be no longer delayed. Those which were transplanted out in former months, should be earthed up as often as their growth will admit of it. This operation should always be performed in dry weather.

*Note.*—All seeds sown in this and the following month, should be carefully protected from the hot sun and beating rains, which would effectually destroy the plants, even should they be up. If sown in seed beds, make a scaffolding about 3 feet high, and place on it pine branches, which answer this purpose better than branches of any other trees—but any other covering may be used.

**OBITUARY.**—Departed this life at Columbia, NICHOLAS HERBEMONT, in the 63th year of his age. This gentleman was born in France, at the town of Joncheres, in Champagne, about four leagues from Rheims, on the 23th January, 1771. He emigrated to the United States at a very early age, having not yet attained twenty one; and after spending a few years at Pittsburg, in Virginia, he came to South-Carolina in 1801, and cast his destinies amongst us.

Here, during a residence of thirty-seven years, (interrupted only by a short visit to France) he acquired the respect of the whole community by the integrity of his character, the purity of his life, and his exertions for the public good. A high sense of honor and utter contempt for any thing base, distinguished his conduct through life. He was devoted to agricultural experiments, and most persevering in his efforts to introduce the culture of the grape, which he believed, would one day constitute one of the staples of the South. In 1829, the United Agricultural Society of Society, awarded to him a beautiful gold medal "for his successful experiments in the culture of the Vine, and the making of Wine in this State." He was a frequent and valuable contributor to various Agricultural Journals, and carried on an extensive correspondence with scientific gentlemen, in different parts of the Union, who were devoted to these subjects. As a member of the former Board of Public Works of this State, and as President of the Regents of the Lunatic Asylum, and in other public capacities, he discharged with fidelity the duties which devolved upon him; and on the 29th June, he closed a life of honor and usefulness, with the respect and the regrets of the community among whom he had so long lived.—*Columbia Telescope.*